



# ePortfolios Australia Conference 2010

Widening participation — engaging the learner

## Book of Abstracts and Papers

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**Australian Flexible Learning Framework**  
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**ePortfolio Australia Conference 2010: Widening participation — engaging the learner**

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## Welcome

We hope this foretaste of the presentations and papers to be delivered at the ePortfolios Australia Conference 2010 will give an insight into the variety and depth of topics covered. This set of papers, case studies and abstracts showcase current ePortfolio practice amongst the vocational education and training, higher education and adult and community education sectors.

The presenters cover a wide range of sectors and disciplines and we hope that their experiences will develop your interest into the varied ways ePortfolios are serving as a catalyst to support and engage adult learning.

The ePortfolio themes are cross sector to generate ideas that all will be able to share and use with learners, including widening participation, work placements and employer partnerships, managing implementation and designing for sustainability and career pathways and lifelong learning.

Following the conference additional materials will be added to the website for your further review.

### *Conference Organising Committee*

**Allison Miller**, Australian Flexible Learning Framework

**Beverley Oliver**, Curtin University of Technology

**Emma Crawford**, Queensland University of Technology

**Lynn McAllister**, Queensland University of Technology

**Wendy Harper**, Queensland University of Technology





## ePortfolios to support the developmental progression of UniSA Graduate Qualities against academic standards and professional requirements

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### **Abstract**

The University of South Australia has embedded seven graduate qualities across all programs since the late 1990s, and, is currently investigating ways to extend on this work in line with the Australian Government's new standards-based quality assurance framework. This paper outlines the approach of a multi-disciplinary project currently undertaken to review the articulation of the development of Graduate Qualities (GQs) for students with a focus on developing and reviewing resources that connect this with the development of professional identity. Specifically this project focuses on the use of ePortfolios in supporting student achievements and understandings of GQ's, and discipline-specific Academic Standards. As part of this project recommendations will be made to support on capturing of evidence of learning outcomes and the marriage of these with professional competencies. The multidisciplinary nature of this project is highly significant as it is anticipated that it will provide both general and specific findings beyond the disciplines of engineering, law and nursing. The benefits arising from sharing ideas and techniques to support learners articulate their progressive development is strength of this project and the outcomes of this will be further elaborated upon within the presentation.

### **Biography**

#### **Syed Mahfuzul Aziz**

Mahfuz Aziz is an Associate Professor in the School of Electrical and Information Engineering at the University of South Australia and, since 2007, the inaugural academic director of UniSA's common first year engineering program. In this capacity he leads the first year teaching and learning team, which involves staff from five schools across the Division of IT, Engineering and the Environment, staff from the Learning and Teaching Unit and the Library. Mahfuz has developed and refined innovative project-based learning strategies and assessment schemes to assist diverse students with their learning. Engaging students in lectures, tutorials and assessments has been a particular focus of his teaching. In 2009 Mahfuz was the

recipient of the Prime Minister's Award for Australian University Teacher of the Year.

He has attracted research funding from the ARC, DSTO and from industry. His research interests include Computer Hardware and Integrated Circuit Design, Biomedical Engineering and Higher Education.

## Implementing ePortfolios: success & sustainability in TAFE NSW Western Sydney Institute

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### Abstract

TAFE NSW Western Sydney Institute initiated a series of ePortfolio trials in Semester 2 2009 in response to requests from teachers wanting to have an electronic method of collecting workplace evidence for assessment and new technologies that would assist in improving learner engagement. The trial aligned with TAFE NSW Strategic Direction — Personalised Learning, Student Outcomes and Workforce Capability and aimed to test the suitability of four ePortfolio system and identify the ways in which teachers could utilise ePortfolios with learners as part of improving delivery of recognition, learning and assessment.

A range of ePortfolio systems including Mahara, PebblePad, SkillsBook and Careers Connect were investigated to examine their strengths and possible uses with both learners and staff including teachers, counsellors and managers from the following areas: Outreach, Information Technology, Community Services and Hairdressing. Over twenty staff members were initially trained in using at least one system; two teachers from hairdressing were successful in their use of ePortfolios with learners. The use of ePortfolios seems to have strength in particular industry areas such as hairdressing where visual presentation is important leading to the belief that this is why these teachers and learners have embraced the technology. Mahara was initially introduced to three groups of hairdressing apprentices in 2009 with the hairdressing section continuing to use Mahara with six groups for delivery and assessment in 2010.

Demonstrated benefits experienced during the trials include the opportunity for students to shine and show off their work allowing them to demonstrate what they know and can do in a creative visual format. The development of personal learner profiles to assist in ongoing work and study roles, experience in developing written language appropriate for job seeking and the workplace, demonstrated development of employability skills, a 'place and sense of belonging for disengaged learners, development and increase in digital literacy skills in professional contexts, skills in storing and organising digital artefacts, editing and uploading images and files. Teacher and learner perceptions of teaching have been altered; teachers are no longer seen as the source of all knowledge as this approach is more learner centred and learner driven. Increased learning for teachers about ways in which to engage learners and deliver programs using learner driven technologies such as ePortfolios, and the ability for the learners work to become a portable lifelong and lifewide canvas that can travel with them.

Issues experienced during the trial include the low uptake of teachers despite access to a variety of ePortfolio systems, adequate training and ongoing support. Time taken to familiarise learners with the technology, technical issues with wireless networking, problems surrounding access to adequate equipment and facilities, and difficulties for teachers in embedding a learner driven, learner controlled environment into existing delivery practices requiring a shift in their views of how learning should occur.

It is clear that the use of ePortfolios requires a paradigm shift for teachers, one that offers a new, yet very unfamiliar way of engaging learners. We would like to build on our experiences from this initial trial by taking a much more focused approach in introducing ePortfolios where they are more likely to succeed and have maximum benefit as a learning and life tool. In 2010 Hairdressing continues to lead the way, with Information Technology at two colleges and Community Services and Outreach at another having shown keen interest. We visualise further potential for ePortfolio use in Recognition of Prior Learning, Continuing Professional Development of staff, and as a tool for personal reflection and shared learning.

## **Biography**

### **Nayomie Baihn**

- VET Educator with TAFE NSW Western Sydney Institute since 2002
- Current Role — Project Officer Workforce Capability Unit — since April 2010

Nayomie's role includes looking after the ongoing Institute ePortfolio Trials — supporting the introduction and uptake of ePortfolios in interested sections through the provision of shared experiences, information, advice, training and on-going support. Nayomie has over 20 years industry experience in Hairdressing.

When not working on project activities, Nayomie's substantive role is Teacher of Hairdressing at Nepean TAFE College where she has been involved in the use of ePortfolios (Mahara) as trialled in 2009 with two groups of students & implemented section-wide for all portfolio based assessments in 2010.

#### *Other Roles:*

- Technology Mentor, eLF Facilitator, OH&S Committee Member
- Bachelor of Education in Adult Education (Vocational Education Major) — University of Technology Sydney 2008
- Philips Prize Winner — University of Technology Sydney 2008
- Golden Key International Honour Society Member — University of Technology Sydney Chapter
- Certificate IV in Assessment & Workplace Training (TAA40104) — University of Technology Sydney 2008
- Certificate IV in Workplace Training & Assessment (BSZ40198) — TAFE NSW Western Sydney Institute

## Work Integrated Learning (WIL) in laboratory medicine at RMIT

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### Abstract

The Laboratory Medicine program at RMIT University is an internationally accredited program offering students careers in all the major areas of laboratory medicine. ePortfolios were first trialled as a way for students to record their Professional Practice placement in 2008. Since then, there have been iterative developments of the ePortfolio practices and processes to allow students to record their compulsory 40 week Professional Practice, Work Integrated Learning (WIL), placement. This case study is a work-in-progress review of the current use of ePortfolios in Laboratory Medicine. Students currently record, and simultaneously reflect upon, their WIL placement using a scaffolded template in PebblePad. They are required to share their monthly journal entries with their workplace and academic supervisors creating a triangulated communication process. Overall this has been a positive experience for staff, students and workplace supervisors.

**Keywords:** *Work Integrated Learning, ePortfolios, PebblePad, Laboratory Medicine, RMIT.*

### Introduction

The use of ePortfolios, or electronic portfolios, within the Australian university sector has expanded rapidly over the past several years (Hallam et al., 2008). ePortfolios provide a space where students can 'record, reflect and present information about themselves and their educational and training experiences for the purposes of learning, assessment, and making transitions, particularly to employment' (Curyer, Leeson, Mason, & Williams, 2007, p. 18). According to the Joint Information Systems Committee (JISC):

*An ePortfolio is the product, created by the learner, a collection of digital artefacts articulating experiences, achievements and learning.*

*Behind any product, or presentation, lie rich and complex processes of planning, synthesising, sharing, discussing, reflecting, giving, receiving and responding to feedback. These processes – referred to here as 'ePortfolio-based learning' – are the focus of increasing attention, since the process of learning can be as important as the end product*

*(JISC, 2008, p. 6).*

At RMIT University (RMIT), ePortfolios were introduced as an enterprise supported tool in 2008. Following a review of various ePortfolio systems in 2007, the university decided to commence a trial of the PebblePad ePortfolio system (Botterill, Allan, & Brooks, 2008). Now in its third year, there are approximately 90 courses with over 5000 students using ePortfolios for learning and teaching purposes. As part of the continuing roll-out of ePortfolios across the university, ePortfolios have been strategically positioned as a vehicle that will enable the ongoing compilation of learning achievements and experiences that can be used for authentic, evidenced-based assessment and demonstration of career readiness.

The introduction and implementation of ePortfolios across the university have been closely aligned with RMIT's strategic directions, notably Graduate Attributes, Work Integrated Learning, Professional Accreditation, Internationalisation and Recognition of Prior Learning. Work Integrated Learning (WIL) is a core component in the majority of RMIT University's programs. A key tenet of WIL is that students should 'learn by doing in context and with feedback [from industry professionals]' (RMIT, 2010c). Types of WIL activities include 'placement in a workplace including practicums and clinical practice' (RMIT, 2010b). This case study explores the use of ePortfolios in the Laboratory Medicine program at RMIT.

### **Background: Laboratory Medicine at RMIT**

Laboratory Medicine at RMIT is the only Australian internationally accredited, four year degree program that prepares students for work as medical scientists in all the major areas of laboratory medicine including haematology, transfusion and transplantation science, cytopathology, histopathology, medical microbiology and clinical biochemistry (RMIT, 2010a). The program is accredited with the Institute of Biomedical Sciences (IBMS) UK, which mandates the academic requirements for programs so that graduates can register as biomedical scientists with the Health Professions Council in the UK and work in laboratories and hospitals globally. The program contains a compulsory WIL professional practice placement which occurs in third year, whereby all students complete up to 40 weeks of supervised work experience in a diagnostic, research or reference laboratory. On average, there are 55 students who participate in the WIL placement per year. RMIT arranges all placement positions and two teaching staff members conduct site visits twice per year to review student performance and elicit feedback from supervisors. Students can also spend 10–13 weeks in approved overseas laboratories in the UK, Ireland, Sweden, Macedonia, Kuwait, USA, Singapore and Hong Kong. Students are only required to come on campus twice per year.

The Professional Practice year comprises of 4 courses: Professional Practice in Laboratory Medicine 1 and 2 (ONPS2175 and 76, each worth 36 credit points) and Principles of Professional Practice 1 and 2 (ONPS2173 and 74, worth 12 credit points each). Prior to the introduction of ePortfolios in Professional Practice (ONPS2175 and 76) in Laboratory Medicine, students produced a paper-based portfolio which was submitted after the completion of their WIL placement at the end of November. This portfolio, often in excess of 150 pages, consisted of weekly journal entries detailing the activities undertaken in the various laboratories and supported by monthly feedback from the students' workplace supervisors. In addition to the portfolio, assessment tasks were required for the Principles of Professional Practice (ONP273 and 74). Here, students had to undertake a risk assessment analysis of

their laboratory, complete an organisational structure assignment, complete a reflective essay on their placement and attend two on-campus seminars which included assessable activities.

At the end of November, the Professional Practice portfolios were submitted to an academic staff member for assessment. They could be submitted as hardcopy at the School office, or they could be emailed and were subsequently printed off. Upon submission of the portfolios, there was a week's turnaround time in which they were very quickly assessed to ascertain if they demonstrated the required competencies and students were thus awarded a pass or fail grade so they could progress (or not) to their final year. Following this, the designated academic staff member spent the next three months completing a thorough review of the portfolios. They were then returned to students when they returned in March the following year. Students were also required to show a Continual Professional Development (CPD) log of activities undertaken throughout their work placement and write a reflective essay of their whole placement experience.

The decision to trial ePortfolios in Laboratory Medicine was based on a number of factors. Firstly, issues had been identified around academics being unable to provide regular feedback and monitor student progress across student placement. This created issues as students received very little if any formative feedback on their Professional Practice portfolio throughout the year, so there was no way for them to know if they were meeting the required learning outcomes and competencies. There was also the issue of assessment workload on one academic staff member and the fact that students did not get their portfolios returned until the start of the next academic year. Students also felt that it was hard to maintain regular communication with their academic supervisors and thus maintain a sense of connection with the program and university. Secondly, it was difficult to monitor if students were meeting the required competencies and learning objectives uniformly across the various hospitals and laboratories. This is important as a way to maintain and monitor the quality of the student experience within the hospitals and laboratories and is also important for continued international program accreditation.

### **ePortfolios in Laboratory Medicine**

ePortfolios, as online learning environments strengthen the university's ability to provide flexible assessment practices and support student career development. For students, ePortfolios enhance the opportunities to provide evidence of formal and informal learning, and position them for the transition to graduate employment. The university-wide availability of student ePortfolio capability provides increased flexibility for the development of assessment practices that are academically robust and independent of time and place, hence they are being used for laboratory and hospital placements with the aim of providing a viable alternative for WIL assessment. The decision to introduce ePortfolios in the course was also considered a way to address the issues mentioned above, streamline processes and meet the Institute of Biomedical Science (IBMS, UK) international accreditation requirements.

This is a case study of work currently being undertaken at RMIT in Laboratory Medicine. The next sections will discuss the approach taken, the outcomes so far, including issues faced, and future directions for ePortfolios in Laboratory Medicine.



### The approach: embedding ePortfolios in Professional Practice

ePortfolios were introduced into the Profession Practice placement courses as a way for students to record, reflect upon and gather evidence of the skills and knowledge acquired in the workplace and also in their formal and informal learning experiences. This was considered important in an era where Information and Communication Technologies (ICTs) are ubiquitous and where Web 2.0 technologies, e.g. blogs, wikis and social networking are used extensively by students in both their academic and social interactions on the internet. This was a chance to change practices from 20th century paper-based portfolios, and transform them into electronic portfolios commensurate with the knowledge economy and the modern era.

In 2008, students and industry partners were invited to voluntarily try the new ePortfolio system, PebblePad. Three laboratories volunteered, including two from the Austin Hospital and one from the Peter MacCallum Centre. In this initial trial, students used PebblePad to record their placement journal entries and receive feedback/comments from their supervisors in second semester. Both students and their supervisors were able to compare experiences and they all acknowledged the advantages of the electronic system. However, work was still required to streamline the recording processes to make using PebblePad easier and simpler for students and industry supervisors. In 2009 all students were asked to use PebblePad to record their journal entries as well as to submit their other assignments. Many students used it efficiently; however some students chose to submit their other assignments as email or hard copy. About 2-3 percent of students emailed their journal entries to their supervisors if they or their supervisor had difficulty with the webfolio setup or if they wanted to attach large documents as evidence.

In 2010, the use of ePortfolios to record and evidence WIL placements was made mandatory and ePortfolio use has been further extended and developed. At the start of the year, following a review of what worked in 2009, the issues faced and areas for improvement, a new and improved template was designed for student use. A template is recognized as a valuable scaffolded approach to facilitate student learning and assessment outcomes (Lawton & Purnell, 2010) and supports 'ePortfolio-based learning' (JISC, 2008, p. 6). Firstly, it was decided to reduce the number of journal entries from weekly to monthly entries. To facilitate feedback between students, workplace supervisors and academic staff, a process was developed whereby students would share their monthly journal entries with their workplace supervisors so they could comment upon them, then these would in turn be seen by the academic staff. It was hoped that this would create and triangulate ongoing feedback and communication across all parties. In order to consolidate the entire year's assessment into one process, all assessment tasks from across the four courses of Professional Practice 1 and 2, and Principles of Professional Practice 1 and 2 are now incorporated into the template. By structuring the entire Professional Practice year's assessment into an ePortfolio, it was felt that students would be able to make connections across the various courses, instead of seeing them as discrete entities.

The template was improved using the form builder tool in PebblePad and the webfolio wizard. The template was then placed within the course's institutional space, called a gateway, so students could copy it into their own ePortfolio and work



in it. The form builder allowed us to build bespoke forms for the different assessment tasks, i.e. the monthly journal entries which included the students needing to identify the learning outcomes and competencies they thought they had achieved in the month (see Figure 1 below), the risk assessment and the organisational structure assessment tasks and the CPD log. In addition to these, a detailed reflective journal was added so that students could reflect on their overall workplace experience. This journal also asked the students to give an example of an experience that demonstrated each of the learning objectives and competencies.

**Journal Entry**

Use this text box to make your journal entry. It will expand to allow an extensive report. Monthly journal entries are usually several pages long and include evidence of activities undertaken.

Add evidence

**Learning Objectives**

Tick the appropriate boxes for the objectives covered in this entry.

- ☐ 1. Prepare reagents, test samples, controls, standards and equipment in readiness to undertake analytical techniques and test procedures
- ☐ 2. Competently perform a range of analytical techniques and test procedures at the standard appropriate to the laboratory discipline in which they have completed their professional practice
- ☐ 3. Maintain and use a range of equipment appropriate to the laboratory discipline in which they have completed their professional practice
- ☐ 4. Determine the validity of test results based on an understanding of the limitations of the technique/s and equipment employed in the analytical procedure
- ☐ 5. Within the limits of their experience, interpret the clinical significance of valid test results using available clinical information
- ☐ 6. Indicate with justification, what further test/s might be appropriate to arrive at a definitive diagnosis for a patient (justification should include an awareness of any regulatory, ethical and resource implications of further testing)
- ☐ 7. Describe, and where appropriate, use electronic (telephone/fax/computer) and paper-based systems of recording, storing and transmitting test results
- ☐ 8. Discuss the need for, preparation and use of laboratory operations and procedures manuals
- ☐ 9. Describe the nature and operation of the quality systems employed in the laboratory to ensure the overall quality of the laboratory's service delivery

Add evidence

**Competencies**

Tick the appropriate boxes for the competencies covered in this entry.

- ☐ Unit 1. Prepare and analyse biological materials
- ☐ Unit 2. Correlate, validate and interpret results of investigations using clinical information
- ☐ Unit 3. Report and issue laboratory results
- ☐ Unit 4. Maintain documentation, equipment and stock
- ☐ Unit 6. Liaise with health workers and others to continuously improve the service
- ☐ Unit 7. Participate in education and training of health workers and others
- ☐ Unit 8. Participate in research and development activities

**Figure 1:** a monthly journal entry form

These forms were then placed inside a webfolio using the webfolio wizard (see Figure 2 below).

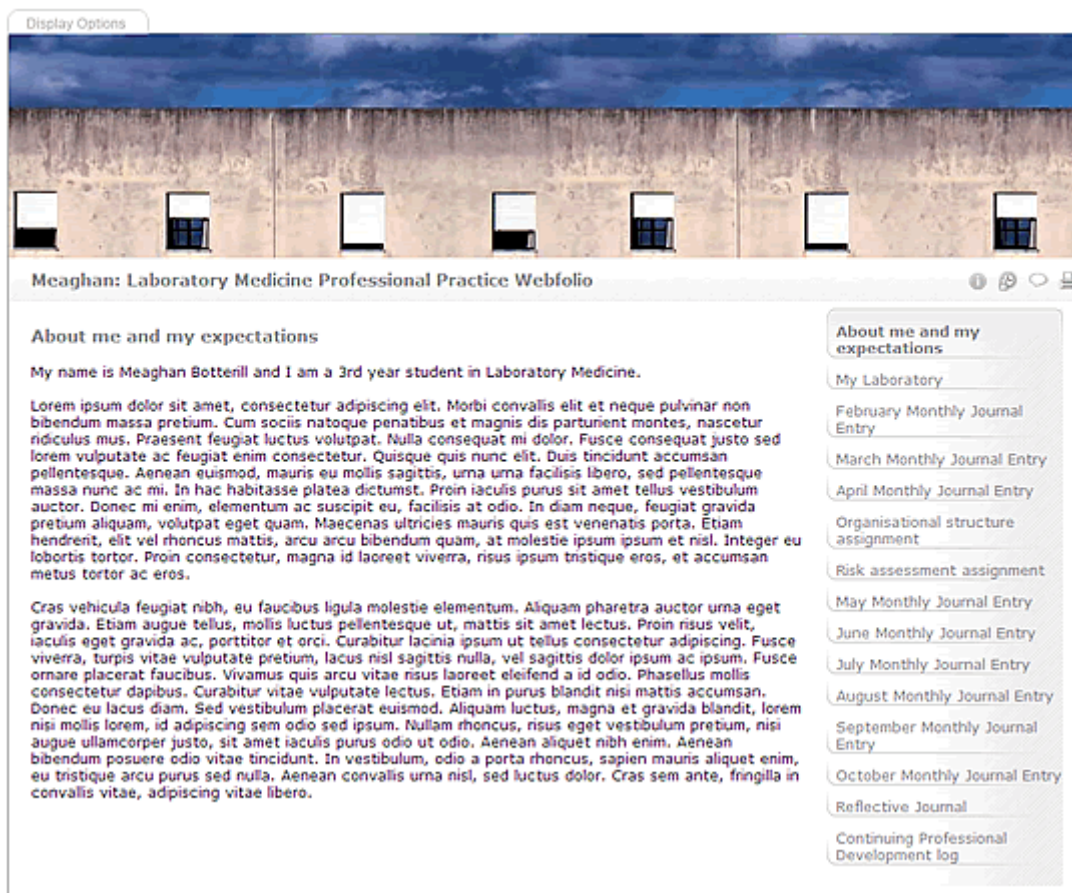


Figure 2: the webfolio template

Finally the template was placed in the resources section of the Laboratory Medicine gateway so students could copy it and use it throughout the year (see Figure 3 below).


Gateway Resources (1) ▲			
Title	Owner	Published	
 Laboratory Medicine Professional Practice Webfolio	Botterill, Meaghan	01/02/2010	<a href="#">Copy</a>

Figure 3: the template in the gateway resources section of the gateway

Once the template was developed and placed in the gateway, a hands-on induction session was held in a computer lab for all students, supported by specific instructions and step-by-step guides. In this, students were introduced to PebblePad, the Laboratory Medicine gateway and the template. They were shown how to copy the template into their ePortfolio, along with the process for sharing their monthly journals with their supervisors and publishing their webfolio to the gateway. There were also specific instructions developed for the workplace supervisors detailing how they could access their student's journal entries and how

to make comments on them. Finally there was an induction session with the teaching team members and 'how to' guides written to support them also.

## Outcomes

### *Students*

The most important aspect of PebblePad from the students' perspective was that ePortfolios allows for multimodal artefacts, e.g. images, videos, audio files, and more traditional rich media files such as Word documents, PowerPoints, spreadsheets etc., to be collected and presented to different audiences as evidence of learning and skills development over time. Some students appreciated the three way communication process and their opportunity to respond to and reflect upon comments from both industry and academic supervisors which overcame the lack of regular face-to-face meetings with both their supervisors together. This allowed them to relate their experiences while on work placement more readily with their academic learning and hence better understand the concepts taught and their real world application and utility. With the previous paper-based end of year submission which were not returned to students till the start of the next academic year, students got so busy studying their final year courses, that most never got an opportunity to link the feedback given by their academic supervisor to their actual work experience. However, even if some of them did relate the feedback back to their work experience, it was not easy to remember what was practiced on work placement possible up to a year ago and relate it to what was taught in second year.

Students also commented on the usefulness of PebblePad beyond industry placement as a resource for themselves and in some cases, they have started to use it for personal use. As students have been using and exploring PebblePad, many have come to realize that it can serve as a kind of extended resume for them. Additionally, they can use it not only within the RMIT to record their learning and achievements during their program, but also beyond their formal university experience and extend it into 'real' life.

The major issue from the students' perspective has been familiarity with the system and the assessment change to ePortfolio-based learning which requires regular input practices rather than last minute rushes. All students were given an induction session at the start of the year in which they had to submit a small assignment as a hurdle task into PebblePad. Those who then started using PebblePad early in their placement were more likely to remember how to use it and were able to submit their monthly journal entry to their placement supervisors. However, those who did not regularly complete their monthly journal entries or started them late, didn't have the same level of familiarity and confidence with the program, and hence they were also unable to assist their supervisors if required.

### *Program (including teaching staff)*

From a program perspective, ePortfolios were introduced to improve assessment practices for students undertaking the compulsory 40 week Professional Practice placement in both local and international hospitals and laboratories which is required for professional accreditation. This has been achieved and has been a great success, and is assisted by the annual review of what has worked and still needs further improvement. This review process has been essential to the ongoing

development of ePortfolio based learning and assessment in the program. Additionally, unexpected results have been the way that ePortfolios provide a unique way of fostering independent and connected learning across a field of study which allows students to link practice and praxis across different courses and activities. We believe that ePortfolios-based learning fosters independent learning and assists students to reflect upon, record and collect evidence of their learning and skills development over time which can therefore be used to support their personal, professional and academic development and to used demonstrate career readiness.

Staff appreciated the ongoing monitoring of student work and the ability to provide good quality, timely feedback. Unlike the previous paper-based portfolio, students often did not receive substantive feedback until after the completion of their professional practice year, so they did not have the ability to benefit from the feedback, work on their weaknesses nor the opportunity to discuss the possibility of gaining further experience in areas they needed most with their placement supervisors. Using PebblePad has enabled staff to ensure that students are provided with equitable facilities and support across the various workplaces and given the opportunity to meet the professional competencies and learning outcomes required in the program. This in turn complements the knowledge that students learn on campus and gives them the ability to apply it in practice. It has been a very useful tool in communicating with students off campus.

So far we have received positive feedback from the students and staff and there is a lot of interest being generated around the university. The only area of concern, raised by both staff and students, has been about technical issues such as speed and certain copy and paste functions. These have been addressed and resolved where possible. Some users feel they require more training as it has taken them a long time to get used to the system. However once they had experience and got over initial teething issues they have been able to appreciate the overall functionality of the process and system.

### *Industry supervisors*

Responses from industry supervisors (n=6) were generally positive regarding the use of PebblePad as a way to manage / monitor student laboratory placement. A final evaluation will be undertaken with all supervisors (n=30) after placements finish. The supervisors who used PebblePad regularly from the start of their student's placement and had received an induction / training session were more positive than those who left it till later in the year. In general, those supervisors who felt discouraged or negative about using PebblePad were not given a proper induction at the start of the year or had left it too long to remember how to use the system. Although all supervisors were given 'how to' guides for to support them, these was not as effective as face-to-face inductions. Thus, early induction sessions helped the supervisors to become familiar with the product and feedback processes. The industry supervisor induction process will be improved upon in 2011 through both site visits and the opportunity to participate in an induction session at RMIT.

The responses from industry supervisors can be put into categories, design issues (navigation) and technical issues. As mentioned, a number of supervisors had problem with familiarity of the software as this was a new process for many of them. There were some concerns about design issues such as finding the 'comment box'. The comment box is on the top right hand side of the webpage and the icon wasn't



very obvious until it was pointed out. A number of supervisors also expressed annoyance with the need to login each time to access their student's monthly journals entries following email notification that the student had shared the journal entry with them. Some said that they were dealing with lots of emails each day and that they 'simply couldn't remember login name and forget their passwords'. However, one supervisor said saw this problem as an organizational problem and was able to overcome it by printing the login name out and placing it on the computer. Finally, several supervisors said that they would have liked to be able to annotate / make specific comments on various parts of the student journal entries. Unfortunately, this cannot be done in the current version of PebblePad. This has been addressed though and will be available in PebblePad 3.

The following comments from one supervisor typifies many of the responses:

*I have found it to be an improvement over the old system of submitting the journal as students often got behind and this meant that they may be asking you to read pages and pages of notes toward the end of their placement. This was not an ideal situation for the student or the supervisor. So the PebblePad requirement that the journal is submitted to an RMIT supervisor means that the laboratory feedback is more current for the student and the effort is spread out*

*I think that the email system is also a good improvement to ensure that the responses are actually coming from a supervisor. I also like the way that the student can attach the various pieces of evidence to their journal, which should be a great resource for them in the future.*

*The only drawback is the inability to make changes to the student's submission with coloured or italicised responses. There is also no ability to change font or make bold for emphasis.*

### Future directions

In 2010, IBMS reaccruited the Laboratory Medicine program until 2014. One of the recommendations was the need for the Professional Practice placement to introduce graded assessment to replace the current competency based assessment, in order to comply with the assessment practices of other accredited programs. The use of PebblePad will make this easier to achieve as the final grades and results must be recorded within 2-4 weeks of the completion of student placements. Thus the use of ePortfolio based learning and assessment will allow for speedy review and examination as it will be ongoing process. A marking rubric will be developed to provide both academics and industry supervisors with a way to grade student progress at regular intervals. Therefore, this will provide a way to provide students with regular progress reports, quality feedback and graded assessment throughout the year.

### Conclusion

The use of ePortfolios in Laboratory Medicine to record student placement has been a success. Generally, the experience from students, academic staff and industry supervisors has been positive, but there is a need to continue to develop capabilities in all stakeholder groups. The main area of concern has been familiarity with the software and processes, although this can be reduced substantially with induction

sessions and early use of the system to reinforce practices. The issues that led to the trial of ePortfolios to record professional practice placement have all been addressed and ongoing annual reviews of the use of ePortfolios in Laboratory Medicine will further develop and evolve ePortfolio learning across the program.

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## Biography

### Meaghan Botterill

Meaghan Botterill is the Senior Coordinator Educational Technology Integration at RMIT University. In this role, she is responsible for the implementation of enterprise-wide educational technologies with a current focus on the introduction of ePortfolios into academic courses and programs across the university. Meaghan has a background in English as a Second Language and Adult literacy and was the Resources Coordinator of RMIT's Study and Learning Centre. She has extensive experience in online learning resource development. In 2003, she was the joint winner of the RMIT University Teaching Award for Student Centred Learning.

## Developing professional skills: introducing students to graduate attributes in first year engineering at RMIT

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### Abstract

Engineers Australia (EA) is the professional body that oversees the professional accreditation of all graduate engineering students in Australia. Since 2008, ePortfolios have been progressively introduced into various engineering disciplines at RMIT at a course, and now at a program level. The introduction of ePortfolios into engineering ensures that students have opportunities to evidence Engineers Australia's graduate attributes. This case study is a work-in-progress review of the successful introduction of ePortfolios into a first year engineering course, Professional Practice 1, within the School of Aerospace, Mechanical and Manufacturing Engineering (SAMME). Here, ePortfolios were introduced in orientation week and subsequent assessment tasks were embedded in the curriculum. The use of PebblePad enabled rapid and personalised feedback from a specially-selected teaching team which resulted in a significant rise in the Course Evaluation Survey results to nearly 80%. This forms stage one of a broader longitudinal study of ePortfolios with an engineering program.

**Keywords:** *Graduate Attributes, ePortfolios, PebblePad, Engineering, Professional Practice, Engineers Australia, RMIT.*

### Introduction

Over the last four years, RMIT University (RMIT) has been incrementally advancing the use of Web 2.0 technologies at an enterprise level through RMIT's eLearning Advancement Program (REAP) which supports the 2006–2010 academic plan. REAP consists of three stages: the first stage saw the establishment of a Minimum Online Presence (MOP) in which all courses had to have a BlackBoard classroom; the second stage increased the utilization of virtual and physical learning environments with the introduction of blogs, wikis and Lectoria; and the third stage promoted active learning through the introduction of electronic portfolios, or ePortfolios, with the aim to:

*Systematically introduce ePortfolios to enhance the opportunities for students to evidence formal and informal learning, and position for the transition to graduate employment. The University-wide availability of student ePortfolio capability will provide increased flexibility for the development of 'assessment practices that are academically robust and independent of time and place'.*  
(RMIT, 2008)

ePortfolios have become increasingly manifest within the Australian Higher Education context over the past several years (Hallam et al., 2008). According to the Joint Information Systems Committee (JISC) in the UK:

*An e-portfolio is the product, created by the learner, a collection of digital artefacts articulating experiences, achievements and learning.*

*Behind any product, or presentation, lie rich and complex processes of planning, synthesising, sharing, discussing, reflecting, giving, receiving and responding to feedback. These processes – referred to here as ‘e-portfolio-based learning’ – are the focus of increasing attention, since the process of learning can be as important as the end product.*

*(JISC, 2008, p. 6)*

The PebblePad ePortfolio system was introduced on a trial basis into RMIT's enterprise eLearning systems in 2008 following a review of various ePortfolio systems in 2007 (Botterill, Allan, & Brooks, 2008). Since 2008, the uptake of ePortfolio based assessment and learning has steadily increased, with over 5000 students currently using them in programs and courses across the university. ePortfolios have been progressively introduced into areas that are aligned with RMIT's strategic directions, namely Graduate Attributes (GAs), Work Integrated Learning (WIL), Professional Accreditation, Internationalisation and Recognition of Prior Learning (RPL). In 2009, GAs were formally adopted in RMIT's 2010 Business Plan, and are underpinned by a five year implementation plan, which aims to provide RMIT students across both sectors with a sustained and supported process for the development and evidencing of GAs using ePortfolios.

The focus on GAs in educational policy and practice in recent years has reflected a government and industry-led outcomes agenda which emphasises applied learning and employability skills (RMIT, 2010). Employer groups have called for tertiary education providers to move beyond teaching technical or discipline skills, in order to equip students with a broader range of generic skills and attributes to prepare them for work in a globalised economy experiencing rapid technological change (James, Lefoe, & Hadi, 2004). Universities themselves are also increasingly concerned with the need to develop students with generic skills / attributes to complement disciplinary knowledge so they are employable and are capable of actively participating in society (Barrie, 2007; James et al., 2004). In addition to the evidencing of GAs in universities, many professional bodies and industry groups have their own GAs, or professional skills, that graduates must be able to demonstrate in order to receive professional accreditation with relevant industry / professional bodies. Managed through program accreditation procedures, programs must be able to demonstrate where these professional skills are embedded within programs in order to receive formal program accreditation. Accreditation is an important process as it recognises that educational institutions and / or programs satisfy standard qualifications and criteria, thereby maintaining quality assurance in program delivery (Patil & Codner, 2007).

Since 2008, ePortfolios have been progressively introduced into various engineering disciplines at both course and now at a program level. One of the main factors underpinning the introduction of ePortfolios into engineering has been to evidence EA's Stage 1 Competencies for Professional Engineers that state that graduate engineers should possess the following attributes:



- *ability to apply knowledge of basic science and engineering fundamentals;*
- *ability to communicate effectively, not only with engineers but also with the community at large;*
- *in-depth technical competence in at least one engineering discipline;*
- *ability to undertake problem identification, formulation and solution;*
- *ability to utilise a systems approach to design and operational performance;*
- *ability to function effectively as an individual and in multi-disciplinary and multi-cultural teams, with the capacity to be a leader or manager as well as an effective team member;*
- *understanding of the social, cultural, global and environmental responsibilities of the professional engineer, and the need for sustainable development;*
- *understanding of the principles of sustainable design and development;*
- *understanding of professional and ethical responsibilities and commitment to them; and*
- *expectation of the need to undertake lifelong learning, and capacity to do.*

*(Engineers Australia, 2006)*

Developing professional skills and reflective practice is not new within various academic disciplines, but is becoming increasingly important in Engineering (Halstead & Sutherland, 2006). The ability to provide students with opportunities to develop, reflect upon and evidence professional graduate attributes forms the basis of the following case study.

### **Background: Engineering at RMIT**

Engineering at RMIT is structured into four schools: Aerospace, Mechanical and Manufacturing Engineering (SAMME), Civil, Environmental and Chemical Engineering (SCECE), Electrical and Computer Engineering (SECE) and Engineering TAFE. In 2009, SAMME trialled the PebblePad ePortfolio system in the final year Aerospace Thesis Project 1 and 2 courses (AERO2361 & 2365). Here, students had to submit their thesis in PebblePad and also keep a blog to evidence their thesis journey and academic progress throughout the year. While there were some initial technical issues, student feedback suggested that they did not like changes in assessment practices in their final year, and therefore many students felt that the goal posts had been moved on them with the introduction of ePortfolio-based assessment. Furthermore, students did not see how ePortfolios would assist their career development, as many of them already had jobs offers for 2010. In spite of student misgivings about using PebblePad for their final year thesis, the quality of their theses were enhanced by the use of multi-modal evidence, e.g. video, to support their research which could not be achieved with paper-based theses. Additionally, SAMME invited industry experts / external supervisors to review

student blogs. This was considered to be ‘an excellent way’ for industry experts to review student research and progress and provide critical feedback to students, as the following feedback demonstrates:

*The blogs described what has been done in general terms and did not include any technical content. There is some reflection of student’s emotions but there is no technical reflection. Technical problems weren’t always identified and where they were there were no specific actions to try to fix the problem. There was no serious reflection about whether any solutions to problems were effective in solving the problem.*

(SAMME, 2009)

In SCECE, ePortfolios were originally trialled as a tool to evidence Vacation Employment, a mandatory, non-credit bearing course in which students must complete the equivalent of 12 weeks full time work experience in order to evidence EA’s Stage One Competencies for Professional Engineers and is usually completed between third and fourth (final) years. Here, a profile – i.e. a set of bespoke capability statements – was developed in PebblePad using the profile builder tool, and students used this to record and evidence their work experience (Li, Molyneaux, & Botterill, 2009). This was well received by students as it was meaningful and had a definite purpose to it.

Following the general success of these pilot projects, the three Higher Education Engineering schools considered a broader adoption of ePortfolios to improve professional skill development in their programs, satisfy program accreditation standards with Engineers Australia (EA), and provide students with opportunities and mechanisms to evidence the development of EA’s graduate attributes. As a result, the decision was made to introduce ePortfolios into all first year undergraduate Engineering programs across the three schools in the core, multidisciplinary, problem-based learning course Professional Practice 1, which includes the related Engineers without Borders (EWB) challenge project. This is the first stage of introducing ePortfolios across all undergraduate Engineering programs: in 2011, ePortfolio use will be extended into second year, then 2012 into third year and finally fourth year. Therefore by graduation, students will have developed their ePortfolios across their programs and use this to evidence their learning, skills and professional competencies.

This case study explores how ePortfolios have been introduced into AERO2248 – Professional Practice 1. This research forms the initial stage of a broader longitudinal study of developing and evidencing professional graduate attributes as well as how ePortfolios support student engagement and reflective practices.

#### *Introducing graduate attributes in Professional Practice 1 (AERO2248)*

Professional Practice 1 is a multidisciplinary, first year core course that introduces students to problem-based learning and the EWB challenge project. In 2010, the course had over 330 students from across the Aerospace, Automotive, Mechanical, Advanced Manufacturing and Mechatronics Engineering and Applied Science (Aviation) disciplines. The majority of students were school leavers and this was their first experience of university life and learning. There were some deliberate decisions made regarding the introduction of ePortfolios into this course, which from a management perspective is considered to be difficult with regular Course Evaluation Survey (CES) results below 50%.

The first decision was the deliberate selection of the course coordinator, Dr Caleb White, followed by the selection of a hand-picked tutor team in conjunction with the school's Director of Learning and Teaching. The importance of the teaching team was acknowledged as essential to the successful introduction of ePortfolio-based learning in the course, and thus the program, as it required fundamental changes in assessment practices. The tutors were generally young postgraduate students, who it was felt would still be able to remember what it was like to be a first year student and it was hoped that the students would be able to relate to also. Secondly, a new two day, school-based orientation program was developed to complement the university-wide program. This included site visits to other campuses, and an induction session to PebblePad consisting of two concurrent sessions held in large computer labs. The sessions introduced students to the concept of ePortfolios and specifically to the PebblePad system. They were also given their first assessment task, the completion of an orientation form. Support materials and 'how to' guides were written to guide students through logging into PebblePad, accessing the orientation form, filling it in and submitting it to the AERO2248 gateway.

The decision to create an orientation form and use it as a compulsory hurdle / assessment task was threefold. Firstly, as large student cohorts are increasingly common, it is hard to foster a sense of community / intimacy with the traditional lecture and tutorial system, so the orientation form provided a way to find out personal information about the students during orientation week (0 Week) which informed the teaching team about the backgrounds, aspirations and motivations of their students. Secondly, by introducing ePortfolio-based learning and assessment in 0 Week, an explicit message was given that ePortfolios are integral to the professional practice course, but also to the program as a whole. Students were told that they would be able to use their ePortfolio across their program to collect evidence of their learning, skills, academic and career development, including EA's GAs, so they can apply for professional accreditation. Finally, by submitting the assessment form as their first assessment task, the teaching team were able to check that students had been able to log into PebblePad and use the software.

The orientation form was created using the form builder tool in PebblePad. This form asked students a range of questions covering areas such as their interests, life goals, motivations for wanting to study in their chosen field, the qualities they thought a professional in their chosen field needed to have and how they thought they will develop these, what they were looking forward to at university, and their understanding of sustainability (see Figure 1).

The screenshot shows a web browser window with the title "ePortfolio Orientation | Form | RMIT - Mozilla Firefox". The address bar displays the URL "https://www.pebblepad.com.au/rmit/viewasset.aspx?type=formresponse&mode=edit&cid=215488". The form contains four sections, each with a question and a text input area:

- Section 1:** "What are you looking forward to at University?" followed by "Learning at University is different to School, what are you excited about?".
- Section 2:** "Are you comfortable with learning at University?" followed by "Is there anything that you are apprehensive or unsure about?".
- Section 3:** "What qualities do you think a professional in your field needs to have?" followed by "Describe the qualities you think a professional in your chosen career needs to have in the workplace.".
- Section 4:** "How will you develop these qualities across your program?" followed by "Describe how you think you will develop the skills and knowledge required to be a professional in your chosen area.".

The browser's status bar at the bottom shows "Done" and the website "www.pebblepad.com.au".

**Figure 1:** Section of the Professional Practice orientation form

The form was the students' first exposure to thinking about and articulating what graduate attributes may mean within their disciplines. This was reinforced in the first lecture where EA's GAs were explicitly underlined in the course's learning outcomes and students were told that upon completion of the course they would be able to:

- Identify the attributes and capabilities of professionals in your discipline;
- discuss ideas of culture and considerations of cross-cultural interaction;
- work effectively both individually and within teams;
- apply the design process of problem identification, formulation and solution;
- identify appropriate information sources and conduct research to support decision making;
- Apply the concepts of sustainability and appropriate technology when you design solutions to real-world problems;
- communicate effectively with other students, professionals and the community;
- identify and deal with ethical issues which may arise when working as a professional;
- apply skills for life-long learning throughout your professional career.

### Assessing graduate attributes in Professional Practice 1

As mentioned, the orientation form was the first assessment task introduced as part of 0 Week activities. Students were told that the form needed to be filled in and submitted to the AERO2248 gateway (the course's institutional space) by the end of the Week 1. If students successfully submitted the form to the gateway, they received a blanket 5% grade regardless of the quality of their responses. The main objective of this assessment task was to ensure that students were able to use PebblePad. However, all students received feedback on their submission. The course coordinator used the comment bank function in PebblePad to leave feedback on all the forms. The comment bank function allows reusable comments to be created that can easily be appended to student work (see Figure 2). This allowed over 330 student forms to be read and assessed within six hours.


**Figure 2:** The comment bank function allows predefined statements to be added to student work

There were a further three ePortfolio assessment tasks directly related to GAs in the course. The first two of these had two evenly weighted parts:

- Part 1: Myers-Briggs Jung personality type test (5%)
- Part 2: Professional Development Plan (5%)

Students were required to complete a Myer-Briggs Jung type personality test and then write a reflection about their reaction to, and analysis of, the results using the Thought asset wizard in PebblePad using either the What, So What, Now What or Reflective Journal options and send it to their tutor's gateway. This was assessed via a bespoke assessment rubric form, once again created using the form builder tool, which outlined the marking criteria and had a comment box where personalized

feedback could be added for each student (see Figure 3). The second part of this assessment task was for students to select a graduate attribute from a specified list and write a professional development plan using the Action Plan wizard that outlined how they would like to strengthen this attribute throughout the semester, e.g. in their EWB team project. This was also assessed using a bespoke form developed for this assessment task. The final assessment task was a student blog using the Blog wizard in which students had to reflect upon their how they were progressing against their professional development plan. The blog accounted for 10% of the overall grade with 5% allocated for consistent postings and 5% for the reflective qualities of the postings (see Figure 4 below). ePortfolio-based assessment therefore made up 25% of the entire course assessment.


**Feedback for ePortfolio Self-Assessment (Part 1)**

This form is used to provide feedback to you for your reflective 'thought' based on the Myers Briggs - Jung Type Test. This is applicable to either the 'what? so what? now what?' or the 'reflective cycle' PebblePad thought options.

The task is worth a maximum of 5% (evaluated with the criteria below).

**Assessment**

5% - Very high quality response that demonstrates excellent description, analysis and planning as well as application to other situations.

4% - High quality response that demonstrates good description, analysis and planning.

3% - Satisfactory response that demonstrates description, analysis and planning.

2% - The response is descriptive, and does not demonstrate analysis or planning.

1% - The response is descriptive only and does not demonstrate analysis and planning.

5%   4%   3%   2%   1%

☐   ☐   ☐   ☐   ☐

**Comments**

**Figure 3:** The assessment rubric form for the Myer-Briggs Jung personality type test



This form is used to provide feedback to you for your reflective blog.  
The task is worth a maximum of 10%.

**Consistency (5%)**  
Your first post each week contributes 0.625% up to a possible total of 5%.

Week 5	Week 6	Week 7	Week 8	Week 9	Week 10	Week 11	Week 12
✓	✓	✓	✓	✓	✓	✓	

**Reflection (5%)**  
5% - Very high quality responses that build on feedback, demonstrate clear description, considered analysis and planning as well as application to other situations.  
4% - High quality responses that demonstrate good description, analysis and planning.  
3% - Generally satisfactory responses that demonstrate description, analysis and planning.  
2% - The responses are generally descriptive, and do not demonstrate analysis or planning.  
1% - The responses are generally descriptive only and do not demonstrate analysis and planning.

5%	4%	3%	2%	1%
✓				

**Comments**  
Well done on an excellent semester!

**Figure 4:** The blog assessment rubric allocated 5% for consistency of postings and 5% for the reflective quality of them

## Outcomes

The introduction of ePortfolios into Professional Practice 1 is the first stage of integrating ePortfolios across an engineering program, thus the outcomes have ramifications at both course and program levels. Firstly from a student perspective, the use of ePortfolios was successful. The students received rapid and personalised feedback, and were able to develop a mentor relationship with their tutors that greatly assisted their transition into tertiary learning and their First Year Experience (Kift & Moody, 2009). This was seen to validate the selection of a young tutor group. Ultimately, the success of this course was reflected in a significant increase in the CES score, which is often heavily influenced by the perceived quality of feedback received by students, which saw the CES increase to near 80%.

From a course perspective, the use of ePortfolios greatly assisted the coordination and management of tutorial sessions and allowed the quality and quantity of feedback to be standardised across the course. The gateway management structure also enhanced the ability to manage a teaching team and a large student cohort. Regarding the teaching team, the willingness of the tutors to pilot new and innovative assessment practices that took advantage of, and interacted with the students using Web 2.0 technologies, underpinned the success of the course. The use of ePortfolios also required the students to take responsibility for their learning, thereby fostering independent, life-wide and active learning principles.

Finally, from a program perspective, the introduction of ePortfolios into a first year course pre-empted that they will be used across the program and this will impact upon teaching teams and course curricula in subsequent years. According to Atlay, Petrova and Ujma (2009), there are five levels of engagement with ePortfolio-based learning.

- Discrete / additional – ePortfolios as additional to the curriculum (the onus is on the student to develop an ePortfolio with little assistance and minimal disruption to existing curriculum).
- Linked: parallel, not integrated, e.g. linked to graduate attributes, but not assessed within the course.
- Embedded in certain core units / courses in program. Common experience for all students. Assessed as part of course.
- Integrated: embedded across whole curriculum. Most courses use ePortfolios in their assessment practices.
- Extended: across an entire program. Also draws in work and life experiences to cover lifewide and lifelong learning.

SAMME is ultimately hoping to achieve an extended approach to ePortfolio-based learning, and the introduction of ePortfolios into first year as an embedded model of practice is a good start. However, this creates challenges for the program as appropriate courses need to be identified in later years where ePortfolio-based learning can be embedded in curricula, be purposefully used within their contexts and provide meaningful experiences for students. To this end, a problem solving reflective practice process is being trialled in a first year, second semester, hard science-based course, Thermo-Fluids Mechanics. Here students are required to fill in a form reflecting on their problem solving skills, the strategies they employ and their effectiveness (see Figure 5). If this is successful, then there is a model for embedding ePortfolio-based learning and evidencing of EA's GAs in further technical courses in later years.

What topic(s) in Fluid Mechanics have you find to be most difficult so far?  
Please choose one or more of the topics from the options below

Conservation of mass flow ("continuity")	Bernoulli equation	Fluid Momentum	Use of Control Volume	Hydrostatics
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Think of the ONE topic in Fluid mechanics that you find hardest. Please describe in your own words what you think makes the concepts in this particular topic so hard to understand and apply to problem solving.  
Please think about this response and give explanations that are as detailed as you can make them.

What do you plan to do to improve your understanding and skills in relation to this (above) topic which you find very difficult?  
Please think about a strategy that you think you will be able to use to really help you. This strategy should involve actions that you are actually prepared to do (for example, don't say you will try more problems if you really don't think you will do that)

Have you successfully used the above improvement strategy before? If you have used it and it has worked effectively for you, please indicate which course area it was used in.  
If the course area was in your current program please indicate the Course Code (or course name) or alternatively another course or program.

**Figure 5:** The reflection on learning problem solving skills form asks students to reflect on the effectiveness of their problem solving skills and strategies



## Conclusions

Overall the introduction of ePortfolios into Professional Practice 1 has been successful due largely to the efforts of the school, the course coordinator and the teaching team to embed ePortfolios into the curriculum and assessment practices. This has been subsequently endorsed through a significant increase in CES results to nearly 80% which are recognised as being heavily influenced by the perceived quality of feedback received by students. The next stage of this longitudinal study will assess the impact of reflective practices on student learning in a complex technical course. If this proves successful, this could become a model for embedding ePortfolio-based learning across the program and hence develop an extended model of ePortfolio use. This would therefore allow students to show evidence of their learning, skills, academic and professional development, including their ability to evidence Engineers Australia's graduate attributes, across their engineering program.

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## Biography

### Meaghan Botterill

Meaghan Botterill is the Senior Coordinator Educational Technology Integration at RMIT University. In this role, she is responsible for the implementation of enterprise-wide educational technologies with a current focus on the introduction of ePortfolios into academic courses and programs across the university. Meaghan has a background in English as a Second Language and Adult literacy and was the Resources Coordinator of RMIT's Study and Learning Centre. She has extensive experience in online learning resource development. In 2003, she was the joint winner of the RMIT University Teaching Award for Student Centred Learning.

## ePIE — ePortfolios for Indigenous educators: successful partnerships for sustainable solutions

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### Abstract

This paper shares the journey of a project to develop a customised ePortfolio for Indigenous teacher support staff in NT Schools, in order that those in other jurisdictions with similar needs can be informed of its deliberations and outcomes. It describes the way a geographically dispersed project team worked in partnership to negotiate the opportunities and challenges presented during the development and implementation of an ePortfolio framework. This framework is called ePIE (ePortfolios for Indigenous Educators). Without many of the constraining specifications often imposed on such an ePortfolio implementation projects, ePIE's development was able to focus on the needs and aspirations of Indigenous learners in their workplaces and worlds. With due consideration for the needs of RTO assessors and Northern Territory Department of Education and Training policies, the pilot phase of the project has demonstrated the potential of ePIE to be adopted as a flexible and sustainable learning pathway for Indigenous Educators.

**Keywords:** *ePortfolios, Northern Territory, partnerships, VET, RPL, workforce development*

### Introduction

The Northern Territory faces enormous challenges in achieving the targets set by the Closing the Gap (Australian Government, 2009) and other national initiatives. Both the governments of the Northern Territory and Commonwealth have highlighted that local Indigenous education workforce development strategies are a critical components in any attempt to redress educational inequities for Indigenous and non-Indigenous students in remote areas. As (Maher & Gerbic, 2009) found, portfolios have a strong tradition with teacher education and have been used for a

variety of purposes including supporting and documenting professional learning and development and meeting registration requirements. Increasing access to information and communication technology (ICT) in remote schools across the Northern Territory not only creates new demands for teachers' skills in this area, but also provides opportunities for using ePortfolios. Governments are becoming increasingly interested in electronic systems and spaces to display and describe lifelong learning achievement, and the potential role and contribution of ePortfolios (Australian Flexible Learning Framework, 2009b).

The Quality Teaching Package (QTP) is a professional development framework for education staff in communities prescribed through the Northern Territory Emergency Response (NTER). The QTP is designed to improve teaching standards and the capacity to perform other employment-related tasks. The QTP has a particular focus on building the capacity of local Indigenous staff in order to accelerate student learning outcomes and minimise the impact of high teacher turnover. During 2008–09, the Northern Territory Department of Education and Training (NT DET) consulted with all NT DET school stakeholders to identify ways to improve Indigenous staff professional development in Northern Territory (NT) schools. The key recurring themes that emerged from this consultation were:

- that any delivery needs to consider the specific training needs of a small, geographically dispersed audience cost effectively; and,
- there is a need to develop a workplace-based training model with enhanced flexibility through the use of technology.

In 2010, NT DET commissioned a research team from Charles Darwin University (CDU) to explore the potential of ePortfolios to improve school-based, workplace learning and practice. The QTP team, who managed the project chose to examine ePortfolios as: the internet capacity of remote schools had been recently upgraded; ePortfolios have the capacity to support the Recognition of Prior Learning (RPL), showcase evidence of formal, non-formal and informal knowledge and skills using a variety of digital media; can improve communication between peers, assessors and other audiences; and, ePortfolios can contribute to the lifelong career development of Indigenous staff.

This paper describes the emerging outcomes from this study which has resulted in the development of an ePortfolio called ePIE (Electronic Portfolios for Indigenous Educators). ePIE is a tool to support the career and professional development pathways of Aboriginal Assistant Teachers (ATs) in remote areas of the Northern Territory. The paper considers researchers' and NTDET staffs' reflections on the challenges in designing and implementing an ePortfolio during a period of cultural and organizational change within NT DET whilst working across different organisational structures and cultures. Successful collaboration has been achieved through respect for the working contexts and environments of all participants, respect for their knowledge, skills and experience, extensive communication, and the preparedness of individuals to discuss and deliver solutions to unforeseen challenges.

## Background

### *Indigenous Assistant Teachers in the Northern Territory*

Indigenous teacher education programs have been offered by the Batchelor Institute of Indigenous Tertiary Education (BIITE) (or its predecessors) for over 35 years. The Remote Area Teacher Education program (RATE) began in 1976 in response to the demand for increased teacher education for Aboriginal teachers in Aboriginal community schools, especially for the schools developing at homeland centres (Phillips, 2004). As part of this program, para-professional training was provided to Aboriginal Assistant Teachers by Stage 1 of the RATE program. By 1996, a reduction in delivery resources meant the program was revised and became the Diploma and Advanced Diploma of Teaching/Education – Primary and Early Childhood (Phillips, 2004). Delivery shifted from being predominantly community-based, to mixed mode, where students participated in campus-based workshops and completed pre and post-workshop tasks in their communities. There continued to be a strong demand for Assistant Teacher training, but not necessarily to become qualified teachers. In 1999, the Certificate III in Indigenous Education Work was accredited and aimed to provide Aboriginal teaching support staff with the knowledge and confidence to perform their diverse roles in community based schools. The independent review of Indigenous education released in 1999 (Northern Territory Department of Education, 1999), promoted further understanding and acknowledgement of the Indigenous staff members' role in the enrolment and retention of Indigenous students at school. From July 2010, all Indigenous staff commencing their study will be enrolled in the Certificate III, IV and Diploma in Education Support, the new national qualifications within the CHC08 Community Services Training Package. Currently BIITE, Charles Darwin University and Australian Adult Training Services (AATS) are delivering one or other of these qualifications in the Northern Territory.

Aboriginal Assistant Teachers (remote NT nomenclature) (ATs) or Aboriginal and Islander Education Workers (urban NT nomenclature) (AIEWs) (Northern Territory Department of Education, 1999) are employed by the Northern Territory Department of Education and Training, local School Councils, Catholic Education Office or NT Independent Schools. Assistant Teachers employed by NT DET numbered 246 in early 2010 (N. Hanssens, personal communication, 2010), covering an area from the Tiwi Islands in the north to Finke in the south, and Lake Nash in the East to Kintore in the west. Approximately 150 ATs (K. Grace, personal communication, 2010) are currently enrolled in one or more of the new qualifications, or in the final stages of completing their Certificate III in Education Work across the Northern Territory. Issues for Registered Training Organisations (RTOs) and NT DET in meeting the professional development needs of ATs include insufficient funding, geographical spread of schools, small numbers of ATs in discrete locations, individual student circumstances, poor English literacy and numeracy skills, poor access to information and communications technology, the need to work around school timetables, school management and teaching staff turnover rates. These have in turn had an impact on students' capacity to complete their studies and/or engage in pathways to higher levels of study (Northern Territory Department of Education, 1999).

### Policy environment

The cultural and organizational change in the Northern Territory Department of Education and Training (NT DET) has been significant in recent years. This change has occurred largely as a result of the policy environment created both nationally and locally in the aftermath of the release of the *Ampe Akelyernemane Meke Mekarle* “Little Children are Sacred” report (Northern Territory Government, 2007). A number of policy contexts impact on the way professional development of ATs has been implemented and supported.

### The National context

The Council of Australian Governments (COAG), established in May 1992, is the peak intergovernmental forum in Australia (<http://www.coag.gov.au>). National Partnership Agreement (NP) payments have been introduced to support the delivery of specified outputs or projects, facilitate reforms and reward jurisdictions that deliver on nationally significant reforms. A number of the NPs frame the policy context for Northern Territory schools and Aboriginal staff. The Literacy and Numeracy National Partnership (Australian Government, 2008a) has a particular focus on Indigenous students’ outcomes. The National Partnership on Improving Teacher Quality (Australian Government, 2008c) has an emphasis on building professional pathways for Indigenous people and ATs/AIEWs who wish to become a classroom teacher. The National Indigenous Reform Agreement (Closing the Gap) (Schedule 1 Enhancing Education) (Australian Government, 2009) includes measures related to both literacy and numeracy level attainment of students and support for the development of career pathways for Indigenous staff. Many Indigenous students are targeted through the implementation of the National Partnership on Low Socio-Economic Status School Communities) (Australian Government, 2008b). In addition, the Indigenous Early Childhood Development National Partnership (Australian Government, 2008d) and the National Education Agreement (Australian Government, 2008b) aim to build on commitments to achieve universal action to early childhood education, especially for Indigenous children in remote communities.

### The Northern Territory context

The Northern Territory Emergency Response (NTER) was announced by the Australian Government in June 2007 in response to reports of abuse and neglect of children outlined in the *Ampe Akelyernemane Meke Mekarle* “Little Children are Sacred” report (Northern Territory Government, 2007). The Closing the Gap in the NT National Partnership Agreement (Australian Government, 2009) provides for the continuation until 30 June 2012 of a number of measures commenced in 2007 under the Northern Territory Emergency Response (NTER) and relevant legislation. The agreement runs until the 30 June 2012 and is designed to strengthen investment made under the NTER to support the specified outcomes. A key objective of this agreement is to improve the quality of education, increase school participation and increase employment outcomes for Indigenous people.

The *Enhancing Education* measure contained in the Northern Territory Emergency Response (NTER) was introduced in September 2007. Its five sub-measures were additional classrooms, accelerated literacy program, school nutrition program, volunteer teacher initiative and, the quality teaching package. The Quality Teaching



Package (QTP) is a professional development framework designed to improve teaching standards and the capacity of education staff in Northern Territory Emergency Response (NTER) prescribed communities. The QTP has a particular focus on building the capacity of local Indigenous staff in order to accelerate student learning outcomes and to minimise the impact of high teacher turnover. The October 2008 Report of the NTER Review Board (Australian Government, 2008c) noted that ‘the intention to provide greater teacher stability focusing on the recruitment and professional development of Aboriginal teaching staff must be an urgent priority of government’.

Under the Closing the Gap National Partnership Agreement Schedule 1 (Enhancing Education) a number of strategies and their associated outputs have relevance to indigenous ATs. Those particularly driving the need for development of ePIE include, the development of professional standards and work-place based professional development packages, and, the provision of site-based support for remote Indigenous people to be able to complete educational qualifications. Initiatives under the Improving Teacher Quality National Partnership (Australian Government, 2008c) and supplemented by other Northern Territory Government (NTG) initiatives (and associated targets) through the Working Future (Northern Territory Government, 2009b) and Territory 2030 (Northern Territory Government, 2009a) gave further reason to develop an ePortfolio to recognise and support the professional development of Indigenous education staff development. The introduction of Professional Standards for Assistant Teachers aligned to National Teacher Standards required ATs to be able to demonstrate their performance across a range of agreed workplace tasks/situations and to realize an increase in the number of Indigenous employees with formal educational qualifications required re-thinking the existing training delivery and assessment models. By end of 2009 a number of positive outcomes were reported in Part 2 of the Closing the Gap in the Northern Territory Monitoring Report – July to December 2009 (Australian Government, 2010) in relation to up skilling local Indigenous education workers. These included; the first intake of 20 Assistant Teachers in a Diploma of Education Support Qualification; recruitment and placement of twelve NT DET ‘Coaches’ in remote schools to support ATs studying; an increase in the number of ATs undertaking study from 100 to 250 and the delivery of 250 laptops to ATs undertaking formal study.

### Review of the literature

ePortfolios appear to have the potential to transform the processes related to the formal recognition of lifelong (retrospective) and RPL (prospective) learning of Indigenous people. The ability of an ePortfolio to support verification through reflection on professional practice, allows people who may not have evidence or appropriate professional references to demonstrate competence, and, in many industry areas, the ability to reflect on practice could be more important than the actual documentation (Downes, 2009). Multi-media technologies afford ePortfolios a range of benefits beyond those of traditional paper-based portfolios. Efficient and effective maintenance, storage and accessibility, ability to present and reflect on artefacts using a range of media and multiplicity of organisation are just a few of their characteristics (Boyle, 2009). Butler (2006) identified further benefits of ePortfolios over traditional portfolios, including ICT skill development, feedback facilitation, fostering a sense of pride in one’s own work, providing rich pictures of

student learning and competencies, engaging students more in the assessment process and reduced costs of reproduction and the inclusion of privacy features (Butler, 2006). Owen (2009) highlights a number of important issues that require consideration in ePortfolio development including: the 'location' of the ePortfolio, its purpose, its use and accompanying guidelines, initial scaffolding requirements for learners and teachers, how feedback is to be used, goal identification, interoperability, cost, and, pedagogy as it relates to both learning and assessment (Owen, 2009).

A recent review of the use of ePortfolios for RPL assessment found that they were of benefit to all candidates, particularly those who were geographically isolated or lived in different time zones from their assessors when

- templates were utilised to structure the presentation of RPL evidence;
- meta tags were used to organise and find artefacts,;
- the assessment process were streamlined as a result;
- the need for paper based, hard copy evidence and limiting excessive evidence collection were reduced; and,
- the development and strengthening of information and communication technology (ICT) or digital literacy skills was facilitated (Australian Flexible Learning Framework, 2009a).

However, Miller (2009) notes that there are currently limited examples of their use, both in Australia and overseas and that adequate resourcing is required for their wider adoption for RPL assessment. Educational organizations need also to realize that 'electronic versions' and ePortfolios are not equivalent (A. Miller, 2009), and their use requires consideration of an RPL candidate's level of information, digital literacy and availability of communication technology (ICT) for creation, editing, uploading, tagging and management of digital artefacts.

Wallace (2009) in her analysis of good practice in adult education found that learning is optimised when it is student-centred, teaches learners how to learn, recognises prior learning, engages learners in designing and negotiating the learning process, encourages collaboration and empowers learners through the learning and assessment process (Wallace, 2009). This needs to be underpinned by having a sound understanding of learners' aspirations as well as their skills and knowledge. These also accord with indicators of good practice in adult education articulated by (Smith & Blake, 2006) and those related to lifelong learning, the social process that incorporates a wide range of skills and knowledge developed through formal, information and non-formal learning (Field, 2005).

A systematic review of research concerning the factors in training that meet the aspirations of Indigenous Australians (Miller, 2005) identified that their aspirations include self development skills, completion of educational subjects and courses at all levels, employment, self determination and community development. These remain the key starting points for developing and implementing an education framework and associated pedagogy in partnership with Indigenous people, the educational institution and relevant industry representatives. The seven factors Miller (2005) identified must be considered regardless of the location, time or context and were:



- 'community ownership and involvement
- the incorporation of Indigenous identities, cultures, knowledge and values
- the establishment of 'true' partnerships
- flexibility in course design, content and delivery
- quality staff and committed advocacy
- extensive student support services; and,
- appropriate funding that allows for sustainability'.

Effective professional development then is a partnership with learners' workplaces and experience. Participants in the National Centre for Vocational Education Research forum on Indigenous Vocational Education and Training highlighted the importance of working with employment opportunities and developing positive relationships with organizations that have the capacity and capability to support community and family goals (O'Callaghan, 2005). As such, education delivery systems are improved by being *demand responsive* rather than *supply driven* (Young, Guenther, & Boyle, 2007) to encourage participation, support and enhance learning.

Indigenous learners participating in a number of projects focussed on local Indigenous workforce development and recognition of existing skills and knowledge were described by Wallace, Curry and Agar (2008). The learners were found to be actively negotiating the intersections between and across a range of cultural, social and professional knowledge systems. Unfortunately, their knowledge and skills were not always well understood, visible or valued by formal educational systems (Wallace, Curry, & Agar, 2008). Analysis of a range of Indigenous education and employment programs using elearning have had mixed and often unsustainable results due to the lack of consistency, shared vision, investment in key relationships and the changing policy and funding environments that impact on Indigenous livelihoods (Wallace & Boyle, 2010) while quality training programs, are facilitated by trainers/learning facilitators who engage in long term committed partnerships, have demonstrated significant outcomes in education and workforce development. The common factors characterising effective training and assessment programs recognise that Indigenous people bring considerable knowledge and competence to the training relationship and, they focus on outcomes for learners as they relate to their aims and contexts (Wallace & Boyle, 2010).

The link between ICTs and positive Indigenous learning outcomes has been demonstrated across a number of studies. Duggan (2009) highlights the way that ICTs align with Indigenous ways of learning when learning materials are designed and presented in a way that is culturally relevant. Christie (2006), noted that the use of digital technologies is not 'predetermined, it develops in relation to the context, and that through use they are reinvented and configured in response to agendas arising from the context' and are only useful when 'revived on new contexts of knowledge production in active, creative, situated negotiated encounters'. Recently, Kral (Kral, 2010a) has demonstrated the role of digital technologies and new media for expressing contemporary Indigenous identity by youth in remote communities (Kral, 2010b), and identified that young people are mediating between old cultural knowledge and new digital technologies. A report by The Smith Family in 2008 stated that the flexibility of technology is a powerful asset in helping to personalise education resources that are sensitive to cultural differences and Indigenous students' learning styles (The Smith Family, 2008). Approaches that embed

Indigenous knowledge and perspectives as well as encouraging students to explore the potential of ICT has provided a forum to accurately express their ideas, knowledge and skills (Christie, 2006). Boyle and Wallace (2008) explored the steady uptake of ICTs in adult education in Indigenous contexts and found that the use of ICT was successful when it was holistic, framed and based in Indigenous students' experiences and knowledge systems. In their work, ICT pedagogies provided ways for Indigenous students to both manage and record their knowledge and skills in accordance with the relevant Indigenous and personal governance structures, while also meeting formal educational standards. Teachers and Indigenous community members customised the content and use of ICT for local learning purposes. Through professional development sessions, Indigenous people developed confidence in accessing, using and innovating with emerging technologies and built networks across communities of practice and distance.

### The project

The Northern Territory Department of Education and Training (NT DET) commissioned a team from CDU and The Work Lab to develop and trial an ePortfolio framework that would meet the diverse needs of ATs, Registered Training Organisations (RTOs) and NT DET. In order to meet the complex and diverse structures and expectations of these stakeholders, there was a need to develop a customised ePortfolio framework. For the ATs, the ePortfolio had to provide a lifelong tool to recognise and document their knowledge and skills against the range of past and current courses, the draft professional standards for ATs and, it needed to be accessible, regardless of their digital literacy. The ePortfolio framework needed to provide a safe electronic filing cabinet or repository for personal reflection, planning and goal setting, communication and/or collaborative learning. The contents also needed to be able to be repurposed for presentation for employment, promotion or accreditation, and/or for assessment purposes, including recognition of prior learning. Trainers and assessors employed by RTOs operating in the NT needed the framework to clearly demonstrate competency and be capable of meeting the audit requirements of the Australian Quality Training Framework (AQTF) (<http://www.nqc.tvetaustralia.com.au/aqtf>). For NT DET, it needed to show and record progress towards any endorsed Professional Standards for ATs, and be suitable for either or both career development and Recognition of Prior Learning (RPL) purposes of ATs in the education system.

The framework was also required to have the capability to expand to suit the broader NT DET Indigenous education workforce, including school-based auxiliary staff, early childhood and Indigenous teachers upgrading through training for full teacher registration (ITUPs). If successful the project could be expanded to suit the development needs of other workforces within the Northern Territory Government. The chosen framework had to be interoperable with the existing and projected DET information and communications technology (ICT) architecture that included a Moodle learning management system and a media server. The framework needed to be constructed to support migration to NT DET's preferred partner after development. The framework also had to be sustainable, allowing updating by NT DET in the future with sufficient access to a range of training/help guides and the capacity to support an independent help desk.

After scoping the literature regarding available ePortfolio software, and considering the design parameters required for the framework, the NT DET QTP Project Manager and the CDU-based researchers chose Mahara, an open source ePortfolio (<http://www.marhara.org>) as the basis for the framework. Mahara was primarily chosen for its ability to be customized, its interoperability with a broad range of applications, and, its data export capabilities. With the skills and knowledge required to successfully develop and implement an ePortfolio framework becoming apparent, a project management and implementation team was engaged.

The CDU project team members designed the ePortfolio framework, ePIE, and delivered the informational and professional development training sessions across the Northern Territory to ATs and other school based staff. The Work Lab, as is one of the few licensed Mahara partners in Australia customised Mahara to develop ePIE. In addition, they integrated 'RPL Online', a web-based RPL support tool with the ePortfolio. The multimedia developers had previously worked with NT DET so were familiar with the NT context. The NT DET-based project management staff coordinated any activities involving schools and regional staff and provided relevant content material and arranged internal information and promotion sessions. An important element of the ePortfolios implementation was regional and school-based DET staff support at the local level.

ePIE was designed to be user-focused, supporting lifelong learning and career development. ePIE incorporates webpage components to create a more welcoming interface and encourage ATs to feel a sense of ownership over the ePortfolio and content. The ePIE home page (Figure 1 below), is organised into four areas:

- My Place, an entry point for those who are not yet ready for uploading files into a repository for assessment (or other purposes).
- My Learning Stories, which lists all the skills and knowledge required to complete a qualification and is a place to download information about assessment, including templates and examples, and upload assessment items.
- My Resources which contains the ePIE user guides and other useful web-based resources. And,
- My Communication which supports networking between ATs and their mentors.



Figure 1: ePIE Home Page

The project team wanted ePIE to be driven by a Personal Learning Plan (PLP). This would help to ensure that ATs were much more in control of their learning and professional development futures. With an electronic PLP, progress could more easily be visible and supported by other staff in the school environment. The PLP is accessed from 'My Place' together with the ATs 'Profile Page', a simple journal 'wall', a self-assessment checklist against the domains in the Australian Core Skills Framework (Australian Government, 2008a), including digital literacy proficiency' and access to their 'My Photos' view in their ePortfolio.

The project utilised a range of existing printed materials:

- a '*Learning at Work*' Handbook (for the Certificate III in Indigenous Education Work) (Figure 2);
- an 'English Language Self Assessment' (ELSA) booklet (Figure 3)
- work-based task books for the Certificate III (CHC30808), IV (CHC41708) and Diploma (CHC51308) in Education Support

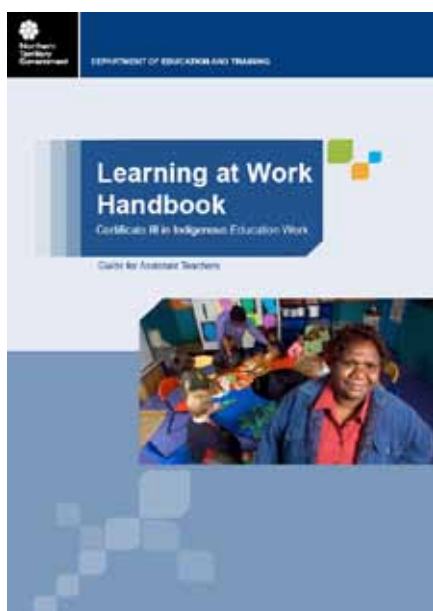


Figure 2: Learning at Work Handbook



Figure 3: ELSA Booklet

Draft Professional Standards for ATs (Figure 4) were also being prepared which map associated position and salary levels linked to successful completion of the Certificates III, IV and Diploma of Education Support.

Northern Territory Department of Education and Training  
Professional Standards for Assistant Teachers

JULY 2009

Standards for Assistant Teachers		LEVEL 1	LEVEL 2	LEVEL 3	LEVEL 4
<p><b>Attitude</b></p> <p>1.1 Welcoming towards teaching a professional attitude and loyalty to the school at all times</p> <p>1.2 Welcoming towards demonstrating knowledge of how to treat all children with dignity and respect</p> <p>1.3 Learning about and working towards attending school meetings when required</p> <p>1.4 Learning about establishing a positive relationship with parents/carers and members of the broader community to support cultural learning for all children</p> <p>1.5 Learning how to support a child's individual beliefs and values governing students</p>					
<p><b>Communication with students</b></p> <p>1.6 Learning how to communicate effectively with students to support their understanding of teacher directions, some learning concepts according to individual progression, with teacher assistance</p>					
<p><b>Learning</b></p> <p>1.7 Welcoming towards attending recognised education/training/development when required, with co-teacher</p> <p>1.8 Engaging in school professional development activities as identified by teachers and school management, to begin to develop their professional learning</p>					
<p><b>Planning</b></p> <p>1.9 Welcoming towards learning how to reflect on and critically evaluate their professional knowledge in the process of planning lessons with classroom teacher in order to coordinate individual efforts, and the effectiveness of their teaching</p>					
<p><b>Teamwork</b></p> <p>1.10 Learning to work alongside co-teacher in organisational, technological and administrative tasks to help manage their duties as a team member effectively</p> <p>1.11 Learn to recognise change as part of team teaching</p> <p>1.12 Learning how to work in teams in L1, assist their work</p>					
<p><b>First language and culture</b></p> <p>1.13 Learning how to communicate with parents: relay parental concerns and relevant community information to the teacher and/or principal and vice versa</p>					
<p><b>Classroom interaction and teaching processes</b></p> <p>1.14 Learning how to demonstrate knowledge of teaching to student background by learning to listen to students read and practice language, maths and other skills with students in L1 or L2</p> <p>1.15 Learning how to support a positive learning environment where respect for the individual is fostered</p> <p>1.16 Learning how to support students in class in reading and writing</p> <p>1.17 Learning how to help and support students to develop working relationships with individual or small groups within a team – learning context</p> <p>1.18 Learning about how the use of materials and resources impact on learning in the context of team teaching</p>					
<p><b>Working cooperatively as a team member</b></p> <p>1.19 Learning how to support the teacher to provide students with extra practice on concepts that have not been mastered, as identified with the teacher in team planning</p>					
<p><b>Knowledge of the curriculum and its documents</b></p> <p>1.20 Learning how to assist with delivery of curriculum, lessons and resources as directed by the teacher and discussed in team planning</p> <p>1.21 Learning how to deliver team prepared programs with individual students or groups of students</p> <p>1.22 Learning about some curriculum documents and materials associated with the content that they teach</p>					
<p><b>Actively participating in co-planning</b></p> <p>1.23 Learning how to assist with and participate in planning the first language programme for bilingual and language and culture programs, and to participate in English planning sessions in year school only</p> <p>1.24 Learning how to assist other staff members with planning, the teaching/learning program with the support of specialist and other teachers, the bilingual and language and culture programs</p> <p>1.25 Learning how to work with others, community and other staff members whether the language programme is appropriate to the learning and the region</p> <p>1.26 Learning to provide suggestions to the teacher/teacher with planning, developing and integrating cultural and language components into the curriculum with the support of specialist and other staff</p>					
<p><b>Assisting to implement the teaching program</b></p> <p>1.27 Learning to assist the teacher to provide opportunities for the students to work with through group activities</p>					
<p><b>Working to teaching/learning goals to assist in monitoring student progress</b></p> <p>1.28 Learning how to observe the monitoring of student engagement in learning, and support the team teacher in monitoring progress of student learning progress to report to management under the guidance of the team teacher</p> <p>1.29 Learning how to assist with monitoring individual student work and providing input to the evaluation of student progress</p> <p>1.30 Learning how to supervise and monitor small groups of students within the same space as the teacher, using the program planned by the teacher and shared in team planning</p> <p>1.31 Learning how to assist with developing and implementing the approved curriculum, with the team teacher, to assist student learning effectively, to provide feedback to students and their families and to inform further planning of teaching and learning</p>					
<p><b>Maintain safe and challenging learning environments</b></p> <p>1.32 Learning how to assist with monitoring student work and providing input to the evaluation of student work and learning behaviour</p>					
<p><b>Appropriate supervision of students</b></p> <p>1.33 Learning how to assist the teacher to prepare, organise and tidy the classroom or work area on a daily basis and assist with setting up activities and assist the teacher to supervise classroom activities in various settings at all times</p>					
<p><b>Micro-teaching across a range of areas</b></p> <p>1.34 Learning how to support the teacher with the organisation, supervision and promotion of activities designed to enhance the healthy emotional, social, intellectual, and physical development of children at the school</p> <p>1.35 Learning to support the teacher in using some teaching and technology and resources related to specific activities</p> <p>1.36 Learning about providing feedback to students about their learning</p>					
<p><b>Implementation of the language and culture program</b></p> <p>1.37 Learning how to support the development of language and cultural learning activities and materials in line with program/curriculum documents</p> <p>1.38 Learning how to support the provision of resources in, through and for the appropriate language programme of the school</p>					

Figure 4: Draft Professional Standards for Assistant Teachers Level 1

Given these draft Professional Standards for ATs had been prepared to both reflect their work in and around schools, and, that these could ultimately be used to manage career progression, we elected to use these as a base to develop and present information within the framework. Four overarching work areas were reflected in the draft Professional Standards, and named as; workplace communication, work with others, teaching and learning and being a professional. The work-based tasks developed for the Qualifications were then mapped into these work areas, and finally to each Unit of Competency. Templates were attached to each task/activity to assist with completing assessments if an AT did not have any alternative form of evidence already available. And, for a number of activities, samples of evidence using a range of digital formats – pdf, image, digital story, audio and video were sourced to provide additional ideas for presenting evidence for assessment.

Once an AT has uploaded a file into their ePortfolio they wish to use as evidence for assessment, they can upload it to the My Files for Assessment area. Once selected, the file enters the RPL Online repository and can be opened and assessed online (or printed), and feedback provided, by their RTO assessor. RPL Online can also provide any number of reports required by the RTO for AQTF compliance when required.

The initial ePIE framework was demonstrated to NT DET staff based in Darwin and remote regions in the Top End. Participants were both managers and those who support the professional development of ATs in remote schools. The workshops



included an introduction to the world of VET, including RPL and using digital tools for evidence creation together with a look at ePIE. An ePIE Ning was created to share stories from the project team and other NT DET support staff in relation to the development and implementation of ePIE. After agreed changes were made to the initial framework, professional development workshops were held in Darwin, Alice Springs, Tennant Creek and across remote regions in the Top End and Central Australia. To date, over 150 ATs, regional NT DET staff, RTO trainers and assessors and other school staff have been given the opportunity to learn about and use their ePIE ePortfolios.

## Discussion

The NT DET's bold vision to create an ePortfolio framework to support the career and professional development of remote Indigenous ATs demonstrates their commitment to the development of this workforce. ePortfolios are yet to be widely adopted by the VET sector in Australia (Miller, 2009), although their potential and application has long been realized by the CDU team with whom they chose as their partners in the development of ePIE.

Issues for Registered Training Organisations (RTOs) and NT DET in meeting the professional development needs of ATs include insufficient funding, geographical spread of schools, small numbers of ATs in discrete locations, individual student circumstances, variable, generally low written English literacy and numeracy skills, poor regular access to information and communications technology, the need to work around school timetables, school management and teaching staff turnover rates. These have in turn had an impact on students' capacity to complete their studies and/or engage in pathways to higher levels of study (Northern Territory Department of Education, 1999).

It was acknowledged from the outset that neither partner had the capability to complete the project on their own. NT DET needed knowledge about VET teaching and learning with and for adults in remote Indigenous contexts and the technical expertise to design, customize, develop and deploy an ePortfolio. The CDU team needed access to remote schools and their staff, to work with regionally located NT DET Indigenous support staff and to promote the adoption of ePIE more broadly within NT DET. Each partner in the project knew they had much to learn, and wanted to learn, from the other. Knowledge integration is most effective when it draws on diverse sources of knowledge, through company partnerships with government agencies, universities and other industry players (Carayannis, Alexander & Ioannidis, 2000).

Building mutual respect for and trust in each other's different abilities and ways of working was critical to the success of this project. Carayannis et al. (2000) suggest that trans-organisational sharing and exchange of knowledge serves as the foundation for the development of trust, which in turn leads to successful cooperative relationships. Although in reference to collaboration between academic institutions and industry, Giesler (2005), in Davenport et al. (1999) proposed that cooperation 'will be more likely to survive over time, the more there are initial assets of good will, trust, favourable prior beliefs, mutual psychological commitment and prior relations between the parties'. In the case of ePIE, everyone involved knew what was needed to be done and why, respected and drew upon the prior knowledge

and experiences of others, had resided in the NT for many years, and, had worked with, or alongside each other in previous projects.

Expectations of both partners were ambitious from the outset, and, as a result of a departmental restructure, ultimately relied on the active support and participation of others who became outside of their direct line of management. Open, honest and regular communication characterised the approach by both partners in the project. Many situations surfaced that required tacit knowledge to be made explicit in order that aspects of the project could proceed. Nonaka and Takeuchi (1995) describe this translation of tacit/implicit knowledge to explicit in their spiral of knowledge creation. There is no doubt that good communication continues to be an important contributor to the project's success, but will always need to be nurtured and monitored. The safe and supportive collaborative space created has meant that there is an ongoing preparedness of individuals to discuss and deliver solutions to the myriad of challenges that arise in a project of this scale.

Information and professional development workshops have now been held in a number of remote schools across the Top End and Central Australia, and are ongoing throughout 2010. To date, approximately 180 individuals have been provided with login details, more than half of which are ATs currently studying with one of two current RTOs delivering the Certificates and Diploma in Education Support. NT DET staff have worked with the CDU project team to facilitate access to regional support staff, who, in turn, has liaised with school principals to coordinate the timing, participant attendance and access to facilities, and with the local providing RTO. This coordinated team approach has meant that learners, local support staff in the school, RTO trainers and assessors and DET staff across the region are all engaged in the implementation of ePIE. Given the geographical spread of ATs, it is critical that as many support staff as possible are up skilled to be able to assist them to use the framework and can continue to work with them whenever they are on site.

The local response has been overwhelmingly positive. ICT infrastructure at NT DET schools has been substantially upgraded in the past year, providing additional computer hardware and reliable access to the internet. It appears, many ATs have previously undertaken computer-related training (although little formal evidence appears to exist to verify this) which has meant that workshop time can focus on navigating and using the framework. However, ATs have identified that all their assessments to date have been hand written. The ability of ePIE to accept a range of digital evidence formats, beyond a scanned copy of a handwritten assessment, acknowledges that the skills and knowledge of ATs may not best/only be captured when written in their second, third or fourth language. Existence of print-based portfolios of work completed by ATs varies from site to site, but ePIE is giving reason for effort to be made to collect what items are available and to seek copies of student records from RTOs with whom they have previously studied.

A sustained presence of support staff ideally provided with on-going professional development in the use and applications of digital tools for evidence collection, creation of evidence that clearly demonstrates competency, the use of ePortfolios for reflection on practice, collaborative planning and learning, and the use of the ePIE framework itself, will be necessary to realize its full potential.



Regular presentations to other non-project related staff in NT DET have been organized by NT DET project team members. These presentations have provided an opportunity to showcase what it is, how it works and what is possible. Valuable feedback has also been provided to the project team during these sessions. It was recognised early in the project that although the NT DET project team members sit within the Human Resource section of the Department, ePIE will need to be valued by far more to be sustainable. The ICT division has been extremely supportive, and the first to recognize its innovative potential. Given its Mahara 'core', ePIE integrates well with the NT DET Learning Management System, Moodle, and may ultimately lead to the development of an ePIE Mahoodle. For now, ePIE has earned a place in the broad schema of NT DET ICT architecture, joining its other web-based offerings for staff through the same host agency.

From an NT DET project participant perspective, their involvement in the research and development process has had a number of benefits that include:

- time to internalize the research and development process over time, instead of reading a final report, or receiving the 'finished' product;
- actively using and showing others how to use ePIE, thereby learning-by-doing;
- time to regularly disseminate project updates across NT DET and more widely across NT government;
- ability to engage other areas of NT DET critical to ePIE's eventual 'adoption' as part of its ICT architecture;
- opportunity to develop a 'community of innovation' within NT DET;
- increased trust in the research and development process and an understanding of the culture of the research team and its organisation;
- opportunity to lend the research and development process a policy and demand-driven focus that can facilitate the more rapid adoption of its outputs; and,
- opportunity to learn more about ePortfolios, digital technologies, the world of VET and the delivery, assessment and student support issues confronting RTOs in the NT.

From a CDU project team perspective, individual benefits varied according to their role, but include:

- improved understanding of the culture and ways of working with NT DET;
- improved understanding of the local situations in remote schools and with individual staff within those schools;
- new knowledge and skills as they relate to the development, management and implementation of ePortfolios across geographically distributed, and very different, environments; and,
- insights into the future development, support and research needs associated with and ePortfolio framework such as ePIE.

Work by Davenport et al (1999) supports the views of the partners in this project, in so far that, the benefits of NT DET's (decision-makers) involvement in the research and development process kept it grounded in reality and helped bring a

decision-relevant focus to the project whilst outweighing the costs of the additional time and effort required by the CDU research team.

## Conclusion

Although the Northern Territory faces enormous challenges in achieving the targets set by the Closing the Gap (Australian Government, 2009) and other national initiatives, the development and subsequent adoption of ePIE will assist to make them a reality. The successful collaboration between the research and development partners — Northern Territory Department of Education and Training and Charles Darwin University has been achieved through respect for the working contexts and environments of all participants, respect for their knowledge, skills and experience, extensive communication, and the preparedness of individuals to discuss and deliver solutions to unforeseen challenges.

Response by remote Assistant Teachers has been positive, although there is still more work to be done, both to increase their skills to be able to engage competently and independently with ePIE, and, for spaces to be created in their life at work to allow them to engage with their own career and professional development. However, possibly the biggest hurdle to overcome is how to broadly engage the trainers and assessors in the use of ePIE. RPL still remains at low levels, and although most staff are familiar with Learning Management Systems, few have experienced ePortfolios, nor the assessment of digital evidence, other than word processed documents. ePIE presents an innovative solution for Indigenous educators, and potentially other remote workforces, but if the opportunities it offers are not embraced by RTOs its true potential will never be realized.

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### Presentation resources (Presented by Alicia Boyle)

**CHARLES DARWIN UNIVERSITY**

**ePIE**  
ePortfolios for Indigenous Educators

Successful partnerships for sustainable solutions

Alicia Boyle (CDU), Ruth Wallace (CDU), Kerry Grace (NT DET), Renu Sharma (NT DET), David Morgan (The Work Lab)

ePortfolios Australia Conference 2010  
Melbourne 3<sup>rd</sup> - 4<sup>th</sup> November, 2010

ePIE | 3 November 2010 | Slide 1

**CHARLES DARWIN UNIVERSITY**

In acknowledgement of all ePIE participants and the warm welcomes received in their country.



ePIE | 3 November 2010 | Slide 2

**CHARLES DARWIN UNIVERSITY**

**Presentation overview**

- [Setting the scene](#)
- [Drivers for change](#)
- [Imagining and design](#)
- [ePIE](#)
- [Supporting RPL with ePIE](#)
- [Putting ePIE to work](#)
- [2010/2011 responses](#)
- [Looking forward](#)
- [Questions and ideas](#)



ePIE | 3 November 2010 | Slide 3

**CHARLES DARWIN UNIVERSITY**

**Setting the scene**

- Snapshot of schooling in the NT
  - Workplaces
- Aboriginal Assistant Teachers (ATs)/Aboriginal and Islander Education Workers (AIEWs)
  - Learners

ePIE | 3 November 2010 | Slide 4







## Designing for owners and viewers



### Assistant Teachers/Owners/Learners

- Clear, simple to use, welcoming, mine/customisable, single login, useful, help guides, track progress, relate to work/job role, meaningful, scaffolded access, driven by a personal learning plan, showcase and celebrate strengths, support learning and communication



### Assessors

- Be more than an electronic shoebox, logical, classified, sorted, relate to units of competency, clearly demonstrate competency through valid, reliable, relevant, current, accurate, authentic evidence, provide a range of auditable, standard reports for AQTF10, suit all RTOs, useful help guides

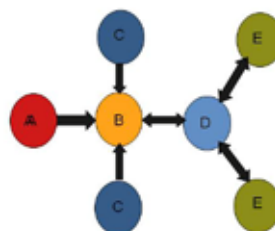


### Government

- Show and record progress towards Professional Standards for Assistant Teachers, useful help guides, range of tutorials, be able to be grown to suit a range of diverse worker/learner groups, sustainable, reliable, stable, simple to support

ePE : 9 November 2009 : Slide 01

## Functional design



- A = Existing programs/resources
- B = ePortfolio design
- C = Growth
- D = Interoperability
- E = Sustainability

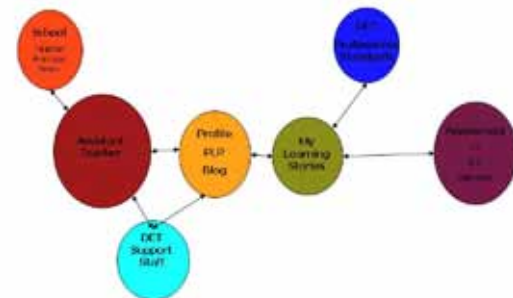
ePE : 9 November 2009 : Slide 02

## ePIE design



ePE : 9 November 2009 : Slide 03

## Information flow



ePE : 9 November 2009 : Slide 04

## ePIE home



ePE : 9 November 2009 : Slide 05

## ePIE RPL for assessors (1)



ePE : 9 November 2009 : Slide 06

## ePIE RPL for assessors (2)



ePIE: 9 November 2010 / Slide 27

## ePIE RPL for assessors (3)



ePIE: 9 November 2010 / Slide 28

## ePIE's world



ePIE: 9 November 2010 / Slide 29

## Putting ePIE to work

- 2 day workshop to DET staff supporting the professional development of ATs in the regions
- Creation and use of an ePIE Ning
- Professional development workshops in Darwin, Alice Springs, Tennant Creek and across 25 + remote schools in the Top End and Central Australia
- Over 150 ATs, regional NT DET staff, RTO trainers and assessors and other school staff have been given the opportunity to learn about and use their ePIE ePortfolios
- Currently over 200 registered users

ePIE: 9 November 2010 / Slide 29

## 2010/2011 responses

- 30+ ATs completed Certificate III in Education Support with support from ePIE by end 2010
- 50+ ATs completed Certificate III in Education Support with support from ePIE by mid 2011
- 30+ ATs completed Certificate IV and Diploma by mid 2011
- 10+ ITUPS presented to NT TRB by mid 2011 using ePIE and registered as teachers
- 50 additional AT enrolments (new and higher qualification level) using ePIE by end 2011

ePIE: 9 November 2010 / Slide 31

## Learning together



ePIE: 9 November 2010 / Slide 32



## Looking forward

- Migration to NT DET ICT infrastructure (2010)
- Ongoing development and support of ATs
- New qualifications in ePIE
  - Certificate III in Community Services (2010)
  - Certificate IV in Training and Assessment (2010/2011)
  - Certificate III, IV and Diploma in Business Administration (General, Finance, HR) (2010/2011)
  - Certificate II, III in Information Technology (2011)
  - Certificate III, IV and Diploma in Childrens' Services (2011)

ePIE | 9 November 2010 | Slide 25



## In appreciation of all our ATs and their support staff



ePIE | 9 November 2010 | Slide 26



## Questions or ideas?

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ePIE | 20 October 2010 | Slide 27

## Biography

### Alicia Boyle

Alicia Boyle has worked in VET/TAFE education and training for 26 years. She has been in Darwin with Charles Darwin University since 1999 and was the Education Coordinator for the Desert Knowledge Cooperative Research Centre for 7 years. Alicia has been the Chair of the Central Australian Education and Training Network for over five years and works extensively in applied research with key interests in education and industry development in regional and remote areas. She is currently leading a team developing and implementing an ePortfolio framework for the Indigenous/remote education workforce in the Northern Territory and attempting to engage in her PhD about this framework.

## The Augusta Community Portfolio: challenges of community revitalization through community curation

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### Abstract

The Augusta Community Portfolio (ACP) (<http://augustaportfolio.com/>) is a portfolio representing literacy activities in Augusta, Arkansas, a small, rural, town in the United States. Sponsored by the University of Arkansas, it builds on two years of community literacy work. Researchers from the University of Arkansas and George Mason University are supporting health centres, schools, and churches to help community members develop their literacy, expanding their individual opportunities and shaping their sense of shared inheritance and collective aspirations. The impact on participation in higher education has been significant, with the number of graduating seniors for the local high school who go on to university increasing from 3 to 33 in the first two years of the project. While the early work focused on print literacy, the portfolio is reframing the products of this earlier activity into digital, interactive media, offering new opportunities for reflection and connection. This new direction also signals a transformation of the portfolio genre from an individual to a collaborative form, supported by the affordances of emerging social software.

We used the metaphor of a museum to introduce the concept of a community digital portfolio to residents of Augusta. Later, we extended this metaphor through comparison to the National Museum of the American Indian (NMAI). Many of the exhibits in the NMAI are curated not by scholarly experts but by groups from the native communities they represent. While we developed the initial version of the ACP, like in the NMAI, subsequent exhibits are being curated by groups of community members, reflecting the principle of ownership central to portfolios.

The design of the NMAI was met with controversy that parallels both ethical dilemmas we face in the ACP and fundamental issues about student ePortfolios. For example, some argue that major NMAI design decisions were made by a largely white senior staff, tokenizing the community curation of exhibits. For the ACP, how much of role can we external experts play in the design process for ownership to genuinely be held by the community? For student ePortfolios, how much structure can be controlled by the institution for students to have ownership? The NMAI has also been criticized as unscholarly, apolitical, and elitist. Each of these criticisms helps us think about the ACP and portfolios in general. This presentation will examine these issues.



## Biography

### Darren Cambridge

Darren Cambridge is assistant professor of Internet studies and information literacy in New Century College and affiliated faculty in the Higher Education Program at George Mason University. Previously he was a director at the American Association for Higher Education, a fellow with the EDUCAUSE National Learning Infrastructure Initiative, and assistant director of the Computer Writing and Research Lab at the University of Texas at Austin. A frequent speaker and facilitator, he consults with colleges, universities, software companies, publishers, non-profit organizations, and governmental bodies worldwide.

He co-leads the Inter/National Coalition for Electronic Portfolio Research, through which sixty teams at institutions of higher education in six countries are investigating the impact of ePortfolio use on teaching, learning, and assessment. He also serves as chair of the board of directors of the Association for Authentic, Experiential, and Evidence-Based Learning. He headed the IMS Global Learning Consortium work on ePortfolio technical standards and George Mason's participation in the Association of American Colleges and Universities' Valid Assessment of Learning in Undergraduate Education project. Lead developer of the award-winning Learning Record Online, he has been active in the Sakai open source community.

His work appears in such journals as *Campus-Wide Information Systems*, *Computers and Education*, the *Journal of General Education*, and *Metropolitan Universities*. He is co-editor of *Electronic Portfolios 2.0: Emergent Research on Implementation and Impact* (Stylus, 2009) and is currently completing an edited volume on the global diffusion of ePortfolios and leading development of the Augusta Community Portfolio.

More information about Cambridge's work can be found on his website at [ncepr.org/darren](http://ncepr.org/darren).

## Prior Learning International Research Centre (PLIRC): an international research agenda for the recognition of prior learning

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### Abstract

The recognition of learning acquired outside of formal learning systems is referred differently in various parts of the globe. In Australia, New Zealand, Ireland, Denmark and South Africa the term recognition of prior learning (RPL) is used. In Canada prior learning assessment and recognition (PLAR) is used, the USA uses prior learning prior learning assessment (PLA) whilst the UK tends to use accreditation of prior learning (APL). A recent OECD publication *Recognising Non-Formal and Informal Learning: Outcomes, Policies and Practices*, (Werquin, 2010) reports on the findings of a study of 22 OECD countries. The study listed the following findings:

- Recognition of non-formal and informal learning outcomes is high on policy agendas;
- Recognition gives non-formal and informal learning outcomes value for further formal learning;
- Recognition gives non-formal and informal learning outcomes value in the labour market and;
- Recognition delivers a range of benefits (for individuals, employers, educational providers, trade unions, social partners and governments) and improves equity (Werquin 2010, pp. 7–8).

In 2009 the Thompson Rivers University (TRU) in Kamloops, B C, Canada through its Open Learning (OL) Division, launched an initiative to develop a new Prior Learning International Research Centre (PLIRC). The vision for the Centre, which is headed by Dr. Christine Wihak, Director of Prior Learning Assessment and Recognition (PLAR) at TRU-OL, is to stimulate innovative and provocative research concerning prior learning and the theory, policy and practice of its assessment and/or recognition and/or validation. Prior learning occurs at the intersection of research on workplace, learning and society and as such has relevance to education and training. It is envisaged that PLIRC will provide an international forum for networking amongst scholars of RPL and will actively promote dissemination of research findings to practitioners and policy makers alike. The Centre would like to engage international academics and applied researchers to participate and join the Centre in international collaborative research around RPL.

With the initiative to develop an international research agenda, the scholars attending PLIRC's inaugural meeting made presentations on the state of prior



learning research in their own countries/regions and/or their own personal research in the area. As its first research initiative, the PLIRC board members agreed to assemble these presentations in the form of a monograph, with Mignonne Breier and Judy Harris acting as editors. The intention is to publish the monograph in 2010.

The ePortfolio Australia Conference 2010 provides a valuable opportunity to gauge the interest of Australian practitioners, applied researchers and academics with research interests in ePortfolios and RPL. This poster presentation provides an avenue for input into the PLIRC international research agenda and to explore possible future research collaborations with the international RPL research community.

*Members of the PLIRC Board of Directors are:*

Mignonne Breier, University of Cape Town, South Africa  
Roslyn Cameron, Southern Cross University, Australia  
Judy Harris, Bishop Grosseteste University College, England  
Helen Pokorny, University of Westminster, England  
Nan Travers, Empire State College, USA  
Joy Van Kleef, Doctoral student, Paris Universit  s  
Patrick Werquin, OECD, Paris Universit  s, France  
Ruth Whittaker, Glasgow Caledonian, Scotland  
Angie Wong, University of Saskatchewan, Canada

## **Biography**

### **Roslyn Cameron**

Ros Cameron lectures and researches in the field of human resource management and development (HRM/HRD) in the School of Commerce and Management at Southern Cross University on the Gold Coast. Ros is the Course Coordinator for a new postgraduate course, the Graduate Certificate in Recruitment, Placement & Career Development aimed at the employment and recruitment services industries. She is currently Project Leader for a CRC Rail research project focused on Skilled Migration for the Rail Industry and is on the project team for another two CRC Rail projects looking at developing a Skills Recognition Framework and Attraction and Image for the Rail Industry.

Ros is a Board Member of the newly formed *Prior Learning International Research Centre (PLIRC)* based in Canada.

She is Editor for a new Journal titled: *International Journal of Mixed Methods in Applied Business and Policy Research*.

*Research Interests:* Skilled Migration; skill recognition systems (RPL); use of ePortfolios for RPL; e-Recruitment, performance management, workforce and succession planning, career development; Leadership, personality type and global leadership; Global mobility skills and global perspectives and; mixed method research methodologies.

## Using ePortfolio in a virtual work placement unit to enhance learning outcomes — a reflection of the changing nature of student engagement with higher education

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### Abstract

The changing nature of student engagement with higher education is influencing the nature of work integrated learning (WIL) experiences across the globe. Barriers posed by distance, visa restrictions, family responsibilities and financial hardship for students invite departure from traditional WIL models to provide authentic and manageable contexts for the skills development of the modern student. In the Virtual Law Placement unit at Queensland University of Technology equity, access and flexibility needs are addressed by enabling undergraduate law students to use online communication technologies to communicate with their supervisors and each other whilst participating in a broad range of employment opportunities. The learning outcomes for this unit specifically include students engaging with, understanding and embracing the communication skills, literacies and technologies required to interact in the workplace along with the ability to learn from their experiences by documenting and reflecting upon them throughout the placement. ePortfolio is used to guide, document and synthesise student learning by assisting students to link theory and practice across their course and to encourage personal reflection and career planning. This paper will report on what has been learned from the extensive evaluation of this unit following its introduction and trial in 2008. Student survey data, supervisor feedback and academic reflections about this learning experience will be explored to identify both emergent themes and erroneous assumptions, to inform the advancement of pedagogy in this rapidly changing field.

**Keywords:** *Reflective learning, assessment, learning outcomes, work-integrated learning, student engagement*

### Introduction

The Australian higher education sector has been under growing pressure from government, industry and the community to demonstrate its ability to respond to skill shortages, the requirements of a professionalised workforce and the demand to produce work-ready graduates (Organisation for Economic Co-operation and Development [OECD], 2004)<sup>1</sup>. Accordingly, Universities are increasingly being

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<sup>1</sup> ACNielsen Research Services. (2000).

required to show how theory and practice combine in undergraduate and postgraduate degrees to generate graduates who are work-ready<sup>2</sup>. Work integrated learning (WIL) is a powerful vehicle for developing generic or professional skills and provides students with the opportunity to improve their employability and work readiness<sup>3</sup>. This form of collaborative learning experience provides a context for students to develop their skills, to see the link between theory and practice and support students in making the transition from university to practice within a purposefully designed curriculum (Patrick et al., 2008)<sup>4</sup>.

However, pragmatic challenges to traditional WIL models are emerging and the changing nature of student engagement in higher education (McInnis & Hartley, 2002) has necessitated the development of new models of WIL in an attempt to keep pace with the increasingly global and technology savvy student body. Indeed, the recent National Scoping study into WIL commissioned by the ALTC<sup>5</sup> has endorsed the need for 'collaborative and inclusive sector-wide engagement in initiatives that can support and sustain a broad range of WIL experiences, whether those experiences have a long WIL history or are more recent WIL initiatives' (Patrick et al., 2008).

This paper will explore one such initiative, the Virtual Law Placement unit (VLP) which was conceptualized and trialled in response to the growing need to provide authentic work-integrated learning opportunities for a diverse population of undergraduate law students. An integral component of the VLP model is the use of ePortfolio to guide, document and synthesise student learning by assisting students to link theory and practice across their course and to encourage personal reflection and career planning. This paper will report on what has been learned from the extensive evaluation of this model following its introduction and trial in 2008. Student survey data, supervisor feedback and academic reflections about this learning experience will be explored to identify both emergent themes and erroneous assumptions, to inform the advancement of pedagogy in this rapidly changing field.

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<sup>2</sup> Bradley, Noonan, Nugent, & Scales (2008, p. 2); cited in The WIL Report (p. 3).

<sup>3</sup> Harvey, Geall, & Moon (1998); Knight (2007); cited in the WIL Report (p. 13). See generally: Dewey, J. (1938). *Experience and education*. New York: MacMillan; Kolb, D. (1984). *Experiential learning*. Englewood Cliffs, NJ: Prentice Hall; Biggs, J. (1999). *Teaching for quality learning at university: What the student does*. Buckingham, UK: Open University Press & Society for Research into Higher Education; Boud, D. (2001). Creating a work based curriculum. In D. Boud & N. Solomon (Eds.), *Work-based learning: A new higher education?* (p. 45). UK: SRHE and Open University Press; Dressler, S., & Keeling, A. (2005). Benefits of cooperative education for students. In R. Coll & C. Eames (Eds.), *International handbook for cooperative education* (pp. 217–236). Boston: World Association for Cooperative Education; Groenewald, T. (2005). Towards a definition of cooperative education. In R. Coll & C. Eames (Eds.), *International handbook for cooperative education* (pp. 17–26). Boston: World Association for Cooperative Education.

<sup>4</sup> As to WIL initiatives in law see Shirley, M., Davies, I., Cockburn, T., & Carver, T. (2006). The challenge of providing work-integrated learning for law students — the QUT experience. *Journal of Clinical Legal Education*, 10, 134–147.

<sup>5</sup> Australian Learning and Teaching Council.

## Literature review

The VLP has facilitated a new type of WIL experience which is intended to operate in the digital environment, and not in the physical workplace which was the focus at the time the Boud, Kolb and Biggs models were conceived. The conceptualisation of this model was necessitated by the pragmatic challenges posed by: the changing nature of student engagement in higher education (Anderson, 2006; McInnis & Hartley, 2002; Patrick et al., 2008); the diverse student population (which includes, for example, international students, employed students, students with family responsibilities, students from lower socio economic backgrounds, students with a disability, indigenous students, and students in regional and remote areas)<sup>6</sup>; the growing need to provide authentic work-integrated learning opportunities for all law students as early as possible in the undergraduate degree despite geographic barriers; and the desirability of creating and enabling international placement opportunities given the global workplace, with minimal cost and risk.

Given that the VLP experience extends upon the traditional work-integrated learning models the authors submit that its trial and evaluation can usefully contribute to the advancement of pedagogy in the field of co-operative education.

### *Authentic Workplace Experiences – accessed remotely*

The VLP offers students the opportunity to apply integrated legal knowledge and skills to complete a real world workplace project in a team using online communication technologies to communicate with their supervisors and each other virtually rather than by physically attending the workplace. This virtual paradigm aims to overcome the traditional barriers posed by distance, visa restrictions, family responsibilities and financial hardship and broadens the range of employment opportunities to a global market. Given that new technologies are transforming the practices of both universities and workplaces, a blended model of e-learning tools has been implemented to create an authentic WIL experience (Shirley, Davies, Cockburn, & Carver, 2006). The technological platform includes a mix of blackboard, video, Skype, discussion forums, ePortfolio, online chat, email and SharePoint with opportunities for face to face communication where possible and desirable. A key benefit of using online technology is that it is an effective means of providing skills training in an environment which can replicate real life and be engaging for students (Butler, 2008) and enables students to interact without the constraints of time or geographical location (Richards, 2003–4). Furthermore, it can also lead to an improved learning environment for students because it assists them in becoming more flexible and enhances their ability to understand and adapt to change (Richards, 2003–4), which has been said to be one of the most important outcomes of legal education (Goldring, 1995).

To ensure the quality of the learning experience in the absence of a physical workplace culture this unit was designed in close collaboration with community partners to incorporate the use of authentic web technologies into the learning experience to support both task based learning and effective second level analysis and collaborative reflection on the learning experience (Arnold, 2008).

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<sup>6</sup> The WIL Report (chap. 6), Major challenges to engaging with WIL.

Accordingly, the VLP aims to use online technology not only to make WIL available to more students, but also to take advantage of technology to create a unique learning experience for students that enhances their technological and other professional skills and better equips them for the transition to the workplace as reflective practitioners. In particular, the learning outcomes specifically include students engaging with, understanding and embracing the communication skills, literacies and technologies required to interact in the workplace along with the ability to learn from their experiences by documenting and reflecting upon them in ePortfolio throughout the placement. ePortfolio is therefore the primary means of facilitating experiential learning and reflective practice by assisting students to link theory and practice across their course. Such an approach is supported by a review of the literature which reveals the importance of ensuring that assessment methods used in WIL programs encourage reflection and integration of theory and practice (Jorgensen & Howard, 2005). By encouraging and enabling reflection on their own learning and achievement, students plan for their personal, academic and career development<sup>7</sup>. Given that assessment drives student learning, ePortfolio assessment tasks, which are an integral component of the assessment regime, have great potential to help students to become reflective learners who are conscious of their personal and professional strengths and weaknesses (Hallam et al., 2008).

#### *Online community of Inquiry*

Throughout this unit learners engage with their supervisors, teachers and teams in an online environment sharing their expectations, preconceptions and experiences. The focal point of academic – supervisor – student engagement and interaction is an online discussion forum which enables students to learn from each other and practice reflective writing skills and in advance of completing assessable ePortfolio entries. This learning approach was specifically incorporated in response to the emerging research suggesting that the level of Generation Y's exposure to information technology media during their formative years has led to a shift in learning preferences as compared with past student generations (Frاند, 2000)<sup>8</sup>. It was also an attempt to respond to the realisation that new Information and Communication Technologies (ICT) such as ePortfolio are transforming the practices of both universities and workplaces which deserves recognition in the design of an authentic work-integrated learning experience (Shirley, Davies, Cockburn, & Carver, 2006).

In addition to the pedagogical advantages of online technologies, it is arguable law modern schools have an obligation to incorporate technologies into their teaching and learning approaches because lawyers in modern legal practices need a mastery of those technological communication skills. Koo recommends that '[l]aw schools should leverage technology more effectively to accomplish the goal of skills transmission', and that they should '[u]tilize technology to create more effective simulations' (Koo, 2007). In particular, as noted by Professor Clark: 'Legal educators must be prepared and able to educate tomorrow's lawyers who will work in law offices which will operate in a dramatically different environment than that which exists in the majority of today's organisations' (Macrae, 2001).

<sup>7</sup> Australian ePortfolio project Final Report, Executive Summary, Recommendation 6 (p. v).

<sup>8</sup> See also Oblinger, D. (2003). Boomers Gen-Xers Millennials, understanding the new students. *Educause Review*, 38(4), 37–47.



## Methodology

The VLP was offered as a pilot in semester two 2008 with a cohort of 20 students. The pilot was conducted over a 13 week semester and consisted of four phases. During phase one students applied for a placement following the recruitment processes of the supervising workplaces. Placement opportunities were intentionally chosen to exemplify the broad spectrum of employment opportunities open to today's law graduates and included a top tier international private law firm (Mallesons Stephen Jaques) a law reform body (the Australian Lawyers Alliance) and a charitable international social justice organisation which operates in SE Asia, particularly Thailand and Cambodia (Bridges Across Borders South East Asia - BABSEA). In Phase two students were allocated to workplace projects and engaged in orientation activities. Phase Three involved students working on projects assigned by each workplace supervisor, ranging from an intellectual property web domain dispute; to a research based project involving the creation of educational materials to inform and protect the rights of prisoners in South East Asia. During phase four, following completion of their projects, students were encouraged to reflect upon the impact of their work in the real world, share those reflections on the online discussion forum, document their reflections in assessable ePortfolio entries and then were provided with feedback from their workplace supervisors as to how their work was actually used. No face to face lectures were scheduled, with all teaching and learning activities taking place on the subject Blackboard site and specially designed SharePoint intranet pages for each workplace<sup>9</sup>.

Resources such as interactive online modules, online readings and web-based resources were provided to support student learning via the unit's Blackboard site. To embed the use of ePortfolio to facilitate and document student reflection on skill development during unit design, the unit coordinator built upon prior experience with using ePortfolio as an e-learning tool in a number of core undergraduate law units (Cockburn, Carver, Shirley, & Davies, 2007) and drew on literature<sup>10</sup>, University wide expertise, particularly the QUT ePortfolio team<sup>11</sup> and Careers and Employment Team<sup>12</sup> to provide support, guidance and practical assistance in identifying and auditing appropriate online resources to support student learning<sup>13</sup>.

Academic facilitator engagement was high in the early phases to ensure that technical issues were dealt with and where necessary supplementary skills developed. Facilitator strategies to encourage dialogue throughout the experience included instigating discussions, acknowledging contributions, referring learners to

<sup>9</sup> For a discussion of the conceptualisation of the model see: Shirley, M., Davies, I., Cockburn, T., & Carver, T. (2006). Challenge of providing work-integrated learning for law students – the QUT experience. *International Journal of Clinical Legal Education*, 9, 134–138.

<sup>10</sup> For example: 'Plan –Do–Review' cycle (Pallister, 2007), which reflects the theories of Kolb's Learning Cycle (Kolb, 1984) and the theories of Action Learning (McGill & Brockbank, 2004); Siemens, G. eportfolios 2004 Elearnspace <http://www.elearnspace.org/Articles/eportfolios.htm>; Eportfolio report.

<sup>11</sup> Lynn McAllister, Kim Hauville, Col McCowan and Wendy Harper.

<sup>12</sup> Alison Thompson and Col McCowan.

<sup>13</sup> For example: QUT ePortfolio site (<http://www.studentportfolio.qut.edu.au/>); online learning module: Using the Student ePortfolio. Siemens, G. eportfolios 2004 Elearnspace <http://www.elearnspace.org/Articles/eportfolios.htm>



supplementary resources, linking those resources, posing critical questions and modelling constructive feedback. In addition, a broad range of online resources were made available to learners to ensure shared understandings of appropriate 'netiquette' and to encourage an honest, sharing climate in which to develop their technical and analytical skills. The virtual paradigm enabled both synchronous and asynchronous communication between teams and workplace supervisors to provide flexibility and arguably a greater level of reflection than may have been possible in a face-to-face environment by enabling learners to express and adapt their understandings and value systems as a result of their personal learning experiences (Arnold, 2008).

The assessment comprised an application for a placement (10% - individual mark), online discussion forum (15% - individual mark), project outline (15% - team mark), completed team project and individual report (40% - 10% team mark and 30% individual mark) and ePortfolio entries reflecting on their skill development (20%).

## Results

Following the pilot offering, student feedback was obtained by a variety of means: a subject specific electronic survey available to all students via the subject's Blackboard site; an additional Blackboard survey directed to evaluating and improving the SharePoint experience; the LEX survey (QUT's student evaluation tool which is also delivered online); and a focus group of students enrolled in the subject. The crucial question was whether the VLP model offered an authentic workplace experience and effective experiential learning experiences.

Some general points arose out of the feedback. First, undergraduate students valued the opportunity to participate in a flexible, online work placement subject which offered a range of workplace opportunities with a view to making a difference in the real world and seeing this real world impact. This was particularly so for those who participated in the BABSEA placement. For example:

*I just want to say that this has been a STAND OUT subject. It's been by far the most interesting and meaningful subject I have done in this course. It took me to the core of why I wanted to do law in the first place. So thank you.*

I liked: 'working on a real project that could change the lives of real people on an issue that meant a lot to me.'

Students also appreciated the opportunity to work on real world projects with real world supervisors, plan for their future careers and especially appreciated receiving feedback from real world human resources people, real world employers and experts, as opposed to academics.

*For me the workplace - the best part was you were talking to real lawyers, not like a student in a lecture hall pretending, writing problem questions about Fred Smith. It was real work, with a real problem, with a real lawyer and a real opinion. It made me feel one day I might actually be a lawyer.*

*Networking relationships established during this unit are of such a degree that they will continue to exist and interact and assist each other well after the unit materials are submitted and assessed.*

The online discussion forum provided an excellent opportunity for students to enthusiastically share knowledge, experiences and reflections (particularly regarding different workplace cultures and office politics), and to learn from each other.

*Forum discussions were great - the nature of the forums allowed almost unlimited discussions to be held to a very detailed extent. Generally, a lot can be learnt from reading other people's views and information posts.*

Interestingly, despite a generally negative response to teamwork in the traditional teaching program, the online teamwork components of the VLP attracted surprisingly positive feedback. Working on meaningful real work projects generally inspired a higher level of student commitment than in conventional subjects where the learning outcomes are not so concrete and students are not so passionate and engaged and student teams worked more effectively than usual with minimal unresolved conflict.

*Team work is pretty awesome – atmosphere of collaboration and everyone doing their jobs. Online makes it very flexible for external students who would not otherwise have been able to meet regularly. In my team, there was a high emphasis placed on everyone being satisfied with every submission so a lot of collaboration was necessary sometimes even for the simplest thing...*

The opportunity to engage in a flexible online learning environment, gain employment related skills, access diverse placement opportunities and document, reflect on this and document their reflections in ePortfolio was especially valued by students.

*The Flexible learning environment ...suits my learning style and fits very well with my "multitude" of other responsibilities. The Assessment (with the obvious absence of high stress "formal exams") was also more suited to allow for my capabilities to be more accurately measured. The opportunity to learn relevant new contemporary skills (ePortfolio) and access to materials (eTutorials) designed to solidify levels of existing knowledge and identify new areas for later exploration (online collaboration), all in one workspace...I believe to have been previously unequalled in my studies to date.*

However, despite their digital native status, student feedback identified a need for specific ICT training and support, particularly in relation to accessing and navigating the e-learning tools, including ePortfolio. This is consistent with emerging research which suggests that despite the prevalence of 'digital natives' in the modern University, the diverse mix of students in any cohort makes it problematic to assume any base standard of ICT competency and mandates a high level of technical support in embedding online learning experiences (Kennedy, Churchward, Judd, Gray, & Krause, 2008).

## Discussion

As a result of reflecting on feedback several changes have been implemented. First, strategies have been adopted to manage student expectations in relation to the need to be more independent in their learning, by making the purpose and intention of the learning experience more explicit. Strategies adopted included: revisions to the study guide and unit outline; email communications/podcasts etc during semester from unit coordinator; supervisor training and resources (including suggesting more

regular meetings and more timely feedback being provided to students). The following advice from previous students was included in the study guide:

*Consider the whole way through what you are getting out of the project – like any work experience, this should be able to get put on your resume and work for you, so the more reflective you are throughout the more you will achieve from the project.*

Improvements have been made to the subject design, delivery and online resources. Additional online resources identified as necessary by students have been included, such as additional QUT online Career Development modules, including an online module on using ePortfolio. A review of the organisation and structure of the Blackboard site was undertaken to make navigation more efficient.

Changes were made to the operation of the online discussion forum to make it operate more effectively and efficiently for students, academic staff and workplace supervisors, including: expectations were shared and protocols were developed, explained and agreed to by all participants prior to the forum opening; the forum was more carefully monitored and moderated; and more clear instructions and exemplars of posts were provided, especially in the early stages of the subject to enable scaffolded learning by students.

IT training resources were developed, including additional resources about using ePortfolio such as tip sheets and online resources and IT training and support was made available for students, workplace supervisors and academics, particularly in the early stages of the subject.

Changes were also made to the assessment regime. More formative assessment and feedback was provided, for example students were given an opportunity to practice their reflective writing and receive feedback from the ePortfolio team on a formative ePortfolio entry early in the semester in advance of the submission of their assessable entries. Workplace supervisors were encouraged to provide more regular, timely and constructive feedback during the placement and exemplars of student assessment submissions from the pilot offering were made available for both supervisors and students.

## Conclusions

Evaluations of the VLP model have confirmed the need to provide learners with earlier access and training to ensure that the learning experience is not frustrated by technical issues or difficulties accessing and navigating the e-learning tools. This has required additional resources in the form of more dedicated IT support staff, access to support within the University, and opportunities for formative feedback, for example by submitting an ePortfolio entry to the ePortfolio team for feedback during week 8 in advance of the assessable submissions at the end of semester. In particular, it has been recognised that greater support needs to be provided in relation to the development and practice of reflective writing skills. Accordingly, further resources are being developed to support student learning in reflective writing for ePortfolio submissions and to support academics who assess these ePortfolio reflections. The authors are now members of a cross disciplinary ALTC Priority Projects Grant 2009-11 (\$215,000): 'Developing a systematic, cross

disciplinary approach to teaching & assessing reflective writing in higher education'<sup>14</sup> which is developing resources for embedding into the model.

It has been asserted that the 'engaged university is seriously committed to interacting with its communities in a meaningful and mutually beneficial way' (Temple, Story, & Delaforce, 2005). The VLP is an example of one University's efforts to blend online learning approaches, including ePortfolio, with collaborative education to prepare learners for the complex and ever changing world of work in a global context. It is an intentional strategy to assist modern students seeking authentic WIL experiences to negotiate the barriers of distance, poverty, cultural diversity and family responsibilities whilst simultaneously expanding the traditional notion of professional work experience to incorporate non-traditional graduate destinations and international perspectives. Feedback from community partners has confirmed that the VLP has achieved some success in this regard:

*the reports are all amazing and we are already implementing them into our projects for our partners. I have emailed some of the QUT students letting them know where their work is now and what the next step is for their research. Great great stuff.*<sup>15</sup>

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<sup>14</sup> Dr M Ryan (Project Leader – education). Other Chief Investigators: Professor N Bahr (education), Professor S Carrington (education), Associate Professor T Cockburn (law), Prof R Nash (health), M Ryan (education), Associate Professor M Shirley (law), C Collis (Creative industries) & I Larkin (Business).

<sup>15</sup> Wendy Morrish, BABSEA workplace supervisor.

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## Biography

### Melinda Shirley

Before joining the QUT Law Faculty in 1991, Melinda was an Associate in the Dispute Resolution division of Cooper Grace & Ward, Brisbane. She is now the Assistant Dean for Teaching and Learning in the Faculty.

Professor Shirley teaches undergraduate units in Foundations of Law, Alternative Dispute Resolution, Equity and Trusts and Work Integrated Learning along with Masters units in Mediation, Clinical Negligence and Negotiation Strategies. She has published extensively in these areas and in teaching and learning with a particular focus on work integrated learning, eLearning pedagogy and developing the resilience of law students through both curricula and extra-curricular activities.



## ePortfolios: a Boomer's perspective

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### Abstract

Those of the Baby Boomer generation have probably already had several jobs in the course of their working lives, and completed several courses of study. Entry into these jobs or courses were unlikely to have been secured with the help of an ePortfolio as they did not exist for Baby Boomers. How did people get work and entry into courses of study before the arrival of the ePortfolio?

Though the concept of an ePortfolio is no longer new, the vast majority of the workforce or student population still do not have one. What has changed so that students and prospective job candidates need an ePortfolio? Will it enable easier access to courses and jobs? How will having an ePortfolio change the way educational institutions and employers target and recruit customers and employees?

This paper will address these questions and feature examples of an action research project that will examine the role of ePortfolios, if any, in how members of Generation X and Y have gained access to study and employment. It will also represent their views in relation to the more general notion of maintaining an ePortfolio for lifelong learning.

This paper will further compare the various ways people have gained access to study and employment in recent times — either with or without an ePortfolio — and attempt to identify the common factors that may be required for successful entry into courses and employment, and that could complement an ePortfolio.

### Biography

#### Michael Coghlan

Michael Coghlan has been working as a creator, facilitator and thinker around e-learning environments since 1997. Trained as an English-as-Second-Language (ESL) teacher, he taught using technology in a blended learning model privately, and later for TAFE in South Australia before transferring to a general professional development role in all things to do with e-learning. He divides his time working as an e-learning facilitator for TAFE SA and his own e-learning business. He is a living example of a networked educator, and was a co-founder of the Webheads online community. He has been described as 'one of the few educators in Australia who has a realistic view of what is possible with technology and education.' He is a frequent presenter at national and international conferences, and has designed and delivered courses on ESL, Facilitating Online, and New Learning Technologies. He also does a reasonable job of writing songs, and singing and playing guitar for audiences who'll listen!



## The ePortfolio selection process at the University of South Australia: a case study

**Stuart Dinmore**

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### Abstract

The University of South Australia, like many other higher education institutions worldwide, is implementing an ePortfolio (eP) as part of its future strategic direction. EPortfolios are considered to be a crucial element in the University's new **learnonline** Personal Learning Environment (PLE), and as such a great deal of importance was placed on the evaluation of the various available products.

This case study constitutes an account of the University's ePortfolio selection process with particular attention to the needs of a large institution with such a diverse range of staff and student needs. A key factor in the selection process was the knowledge that any eP that was selected would only be one element of a Learning Management System (LMS) and would not constitute the whole of that system. Other elements of UniSA's **learnonline** instrument, in addition to the Moodle and the ePortfolio, are a virtual classroom tool, an anti-plagiarism tool, copyright monitoring and reporting tools and a lecture recording system.

A strategy group was created to evaluate the various ePortfolio products and to ascertain which would fit with the University's foundational requirements. These requirements initially included 1) Integration with the LMS (already identified as Moodle), 2) Student ownership, 3) Ease of use and access and, 4) Export and sharing capability. Thus the role of the strategy group became a mapping of pedagogical requirements to ePortfolio capabilities. This was done through the creation of various test scenarios against which each ePortfolio could be assessed using a table of foundational requirements.

In addition to the selection process and criteria this case study concludes with an account of the ePortfolio implementation strategy to be used by UniSA. This strategy takes in to account the technical, pedagogical and logistical perspectives, with the latter perspective including a discussion of the importance of cultural change in teaching and learning (including the introduction of reflective practice) for both staff and students at the University.

## **Biography**

### **Stuart Dinmore**

Stuart Dinmore is a lecturer with the University of South Australia's Learning and Teaching Unit and works in academic development with the University's learnonline project. His particular focus is on teaching and learning using ePortfolios and the web 2.0 environment.

He is currently working on ePortfolio projects related to mentoring and development of graduate qualities. He also has a passion for multimedia production and the ways in which digital video and audio can be integrated in to learning management systems and used effectively for teaching and learning online.

## Qualifications Navigator

**Wendy Davies**

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### Abstract

The Victorian Registration and Qualifications Authority, as part of the Skills Reform Initiative, this year released an online facility called the *Qualifications Navigator*. The *Qualifications Navigator* enables users to add units they have either actually or notionally completed to a list and see what qualifications these units can contribute to. The *Qualifications Navigator* describes units using a common measure, points, for volume of learning, and levels, for complexity.

The website aims to:

- assist learners to make more informed decisions about their qualification options, and particularly to build on learning already successfully achieved
- help ensure VET to VET learners to get recognition for units already achieved
- enable VET to higher education learners to negotiate credit for learning achieved.

This case study will describe the implementation of the site with a range of target users and initial findings on its usefulness in achieving the above aims.

## Giving life to teaching portfolios

**Allan Goody**  
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**Brian von Konsky**  
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### Abstract

Teaching portfolios encourage academic staff to reflect on their teaching and learning skills and to showcase their accomplishments. While teaching portfolios have traditionally been paper-based, this poster reports on work in progress that demonstrates the advantages of using an electronic portfolio. In addition to documents, Curtin University of Technology's *iPortfolio* facilitates the inclusion of video and audio artefacts that can be used to demonstrate learning facilitation in the classroom and communication skills that are difficult to convey in print-based formats. An electronic portfolio facilitates the indexing of artefacts so that they can be used in different contexts as appropriate and in a manner that is both dynamic and engaging. Moreover, an online web-based format readily facilitates ongoing reflection and the maintenance of the teaching portfolio as a 'living' document, rather than simply being an artefact repository. Additional features of the *iPortfolio* enable teaching portfolio holders to selectively share their portfolios with mentors, peers and managers to seek their feedback and can be used to plan one's own professional development, in seeking academic promotion, further employment and in annual performance reviews.

A template is provided to guide teaching portfolio development with recommendations on portfolio structure and the types of artefacts and reflections that are generally appropriate. While there is no prescribed structure for teaching portfolios, the template is based on best practice described in the literature and uses the following sections as a suggested structure.

- teaching philosophy
- teaching record
- leadership and innovations in teaching and learning
- scholarly teaching practice
- teaching effectiveness
- scholarship of teaching and learning (including recognition and awards)
- professional development
- reflection

The template includes instructions under each section listing the information and artefacts that might be appropriate for inclusion. The technical architecture of the *iPortfolio* together with the teaching portfolio template has proven to be user friendly which is a critical issue in widening participation in

the use of electronic portfolios. Staff can begin the development process and submit their teaching portfolio, a requirement for successful completion of the Foundations of Learning and Teaching program, using the iPortfolio. In conjunction with its social learning and guided reflection features, teachers can use the iPortfolio in their teaching programs with students. Its use in the context of a teaching portfolio, in part, models reflective practice, on-going professional development and lifelong learning skills to their students.

## Biographies

### Allan Goody

Allan Goody is a Higher Education Consultant and has worked in higher education for almost 30 years in Australia, North America, Sweden and Asia both as a teaching academic and an academic developer. He earned his doctorate in adult and higher education from the University of Illinois at Urbana Champaign. Allan's work focuses on the preparation and development of academics as teachers in higher education particularly through Foundations of University Teaching and Learning programs. He was a co-founder of the Foundations Colloquium and Network, a community of practice that for the past eight years has provided professional development and support for academic developers working with Foundations programs. Currently Allan works part-time at Curtin University and is an external evaluator for ALTC Projects and Fellowships. Since 2002, he has been the convening editor of the HERDSA Guide series of short practical guides for academics and teaching and learning support professionals. Allan holds a strong personal commitment to social justice and diversity, especially in the work place but also in the broader community and promotes the celebration of diversity and how diversity can enhance organisational and personal goals.

### Brian von Konsky

Brian von Konsky PhD(Curtin) FACS CP is a Senior Lecturer at Curtin University. He is currently seconded to the Office of Assessment, Teaching and Learning where he is responsible for the roll-out of Curtin's University-wide ePortfolio system. Dr von Konsky was elected a Fellow of the Australian Computer Society (ACS) in recognition of his contribution to computing and software engineering education. He is the Associate Director of the ACS Professional Standards Board (PSB) where he has taken a leadership role in defining the ACS Core Body of Knowledge. His research interests include software engineering and computing education, with an emphasis on the development of professional skills like leadership, teamwork, and project management. He is also interested in mobile technologies that support eLearning and collaboration. His work draws on previous experience as Course Coordinator of the Bachelors of Engineering and Science in Software Engineering programs. He has extensive experience in the ICT industry that includes nine years as an employee of Hewlett-Packard.

## A discussion of 2 case studies

**Margaret Granger**

Online Business and e-Learning

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### Abstract

#### Overview

This presentation will discuss how two quite different organisations are using ePortfolios for training and workforce development. These case studies will demonstrate:

- The use of ePortfolios as a tool in developing International post-graduate Information Technology students for work in the Australian environment
- The use of ePortfolios for workplace assessment in the Hairdressing industry (trainees, apprentices and Diploma students).

In both cases, these organisations are using Mahara ([www.mahara.org](http://www.mahara.org)) an open source ePortfolio application which can be integrated with the Moodle Learning Management System ([www.moodle.org](http://www.moodle.org)) to complement other training that is being undertaken by these students.

#### Case Study One — The Australian Computer Society

The Australian Computer Society (ACS) ([www.acs.org.au](http://www.acs.org.au)) is the recognised association for Information and Communications Technology (ICT) professionals.

The Professional Year program in ICT is a structured professional development program combining formal learning and workplace experience. A 12 month job-readiness course, the program represents a new pathway from university to employment in Australia, teaching the necessary professional skills needed for a successful career in the Australian workplace. One of the components of this program is an online Professionalism in ICT (PICT) module that is designed to demonstrate what it means to be a professional in a chosen field. This module will provide the opportunity to develop and maintain an ePortfolio, which can be built on following completion of the Professional Year program.

This case study will demonstrate how the PICT students have used Mahara to develop their professional resume and CV, discuss future directions that ACS is pursuing in using this tool as a means of students keeping a reflective journal of their internship experience.

#### Case Study Two — Cemons Skills Centre

Cemons Skills Centre ([www.cemons.com.au/rto2](http://www.cemons.com.au/rto2)) is a private Registered Training Organisation (RTO) situated in Adelaide, but offering Hairdressing training to students and apprentices State-wide. It has been trialling the use of ePortfolios as a means of collecting evidence of practical workplace activity



and achievement, in order to be able to better integrate workplace assessment into the formal assessment process. Students at the same time are building up a portfolio of evidence for use in future job applications.

This case study will demonstrate how Cemons are using Mahara and Point of View (POV) tools (<http://www.edupov.com>) to collect this evidence, and integrating the ePortfolio into their Moodle Learning Management System.

## **Biography**

### **Margaret Granger**

Margaret has been a teacher/educator for over 30 years. As a TAFE lecturer based at a regional campus, she has been actively involved in the delivery of Business and IT training to students across a large geographic expanse. Her passion for both ICT and its role in enhancing distance education led her to complete a Masters of Professional Education and Training (MPET) followed by a Flexible Learning Leader's scholarship and roles within the Australian Flexible Learning Framework as the EdNA VET Project Manager and then the SA e-Learning Coordinator. Since retiring from the TAFE system, she has continued supporting e-learning as a private consultant. Her current roles include tutoring within the Australian Computer Society's Professional Year program and supporting several of the Framework's Innovations projects. She, in partnership with a colleague, runs an online service [www.grantsandtenders.com.au](http://www.grantsandtenders.com.au) bringing together information and support to VET organisations looking to tender for new business.

## ACE ePortfolios!

### **Liz Grigg**

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### **Lynne Gibb**

elearning Co-ordinator, Coonara Community House

### **Abstract**

Coonara Community House (Coonara CH) is an Adult and Community Education (ACE) provider offering pre-accredited and accredited training in a community setting.

Coonara CH introduced the use of ePortfolios as an extension to the e-learning already offered to students at Coonara CH as a way to hopefully reduce the amount of time required, and therefore costs incurred, in the RPL process. It was hoped that by streamlining the process it would ease the burden on students and staff.

Coonara CH trialled the use of ePortfolios in 2009 with a target group of Diploma of Children's Services students, and in 2010 Coonara CH will be extending the use of ePortfolios as an option for all students in the future.

EPortfolios have been seen as a natural extension of the 'e' currently offered at CCH.

Coonara CH has found the benefit of using ePortfolios is the reduction of physical paper required to complete the process, however, as the documentation is electronic on the part of the student, the implication and collection for audit purposes is still being considered.

One of Coonara CH's staff is also using an ePortfolio for her own RPL in three accredited courses, so is in the unique position of being able to view ePortfolios from both a student and trainer perspective.

Coonara CH's presentation will include an overview of their journey through the ePortfolio trial using Mahara with their students, and will compare it with previous ePortfolio projects using wikis.

### **Biographies**

#### **Liz Grigg**

Liz Grigg is currently an ICT Trainer at Coonara House. Coonara is highly regarded in the Melbourne adult and community education (ACE) sector for its use of innovative e-learning. In 2009, Liz was involved in the E-portfolios Implementation Trial at Coonara House where she worked with a team of educators to develop training resources in support of the ePortfolio implementation. Liz worked with

Diploma of Children's Services students, using the Mahara ePortfolio program to facilitate the recognition of prior learning (RPL) process.

### **Lynne Gibb**

Lynne Gibb is the e-learning Coordinator at Coonara Community House and e-mentor for the eastern and southern Melbourne metropolitan regions. She has been involved in Coonara's journey into e-learning since it began in 2005. In 2009 Lynne, as course facilitator, worked with Liz Grigg in the E-portfolios Implementation Trial at Coonara where they introduced Mahara to a small group of Diploma of Children's Services students as a trial to facilitate their RPL into the course.

## AeP PostScript survey — 2010

**Gillian Hallam**

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**Lynn McAllister**

Queensland University of Technology

### Abstract

The Australian ePortfolio Project team hosted two national ePortfolio symposia at QUT in Brisbane, in February 2008 and February 2009. Following the conclusion of the AeP project work, the Australian Flexible Learning Network, which represents the e-learning strategy in the vocational education and training (VET) sector, took a lead role in planning the next iteration of ePortfolio meetings: ePortfolios Australia Conference 2010, being held in Melbourne in November 2010. The idea of a 'follow up survey' to the AeP was developed in order to provide a current view of ePortfolio engagement at this conference.

The resulting supplementary research activity was undertaken to update the data collected by the AeP project team in late 2007. The plan behind this 'postscript to AeP' project was to refresh the picture of ePortfolio practice in Australia by collecting new data to identify and map the use of ePortfolios in adult learning across the higher education, vocational education and training (VET) and the adult community education (ACE) sectors. The supplementary project has been referred to as the 'AeP PS survey'. The conference session will provide an overview of the current ePortfolio engagement across the broader adult education sectors in Australia.

### Biography

#### **Gillian Hallam**

Gillian Hallam is Adjunct Professor with Queensland University of Technology. From 2007–2009, she was project leader for the Australian ePortfolio Project, a national research initiative to investigate ePortfolio practice in higher education in Australia funded by the Australian Learning and Teaching Council. After ten years of academic life, Gillian now provides consultancy services to the library and information services sector, building on her research experience in the areas of workforce planning and evidence based practice. She is also working with the International Federation of Library Associations (IFLA) to develop and run training programs internationally. She currently serves on the Board of Directors of the Australian Library and Information Association.

## Digital portfolios as a window into the learner's mind and potential: a developmental look at assessment for the 21st century

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### Abstract

#### A developmental look at learners: case studies of ePortfolios 21st century assessment

This developmental portrait of ePortfolios across different stages of learning demonstrates frameworks for a comprehensive assessment system to make learning visible. This session summarizes case studies using ePortfolio projects that respond to the complex social, political, cultural and linguistic factors related to language and learning in secondary and undergraduate programs. These six case studies of students digital portfolios, used as reflective tools, will illustrate ways multiple formats for assessment can be developed to observe, document and keep track of student learning according to both standards based education or competency based programs.

This session overall will address how to best assess and teach all students K–16, to combine formal and informal assessments. First, it will briefly summarize current research and then it present six case studies of students digital portfolios from NY city public high schools showing their use as an 21st century assessment for diverse populations including English language learners and students with disabilities The power of portfolios, as a way to sit beside the learner to see their assets will be described through sharing case studies via the ePortfolio of students from the ages of 12–25 years in public schools, private schools and university settings.

### Biography

#### **Evangeline Harris Stefanakis**

Dr. Evangeline Harris Stefanakis joined the faculty of Boston University in 2007 as a Associate Professor in Educational Leadership coming from Teachers College, Columbia University, where she was an Associate Professor of Research working to better understand the abilities of students with language, learning and behavioural challenges. As a researcher, clinical educator, frequent speaker and writer, she uses a portfolio approach to assessment to understand:

*What assessment and instructional approaches are needed to find the assets of these learners? How can a collection of formal and informal assessments create a learning profile of the “multiple intelligences” of learners? How can new technologies and ePortfolios provide instructional alternatives for*

*students to build on their strengths and address language or learning challenges?*

She has worked with diverse populations including the New York City Public Schools, City of Boston Public Schools, Boston Arts Academy, and Athens College, Bahrain International School, the Archdiocese Schools of Spain and with systemic reform in Norway, the Netherlands and China.

Dr. Stefanakis holds B.S. from Tufts University in Psychology and Child Development, an M.S. in Learning Disabilities and Behavioural Disorders from Lesley University a C.A.S. in Administration, Planning and Social Policy and an Ed.D.in Teaching and Learning from Harvard University.



## Using digital portfolios to remove the cloak of invisibility

**Bronwyn Hegarty**

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### Abstract

In some subjects learners can end up wearing a cloak of invisibility. They attend lectures and tutorials, or they may study predominantly online, and rarely connect with others in the class. They follow the instructions they are given and pass the assessments. However it is difficult for them to express their individuality or demonstrate their creativity or true selves.

It can be motivating for students when the facilitator or teacher models open web-based methods of communication. A portfolio in the form of a blog for presenting evidence of learning to others in the class is one approach. The process of creating a learning portfolio can also stimulate reflection on experience. However, scaffolding the process by providing structure and guidance is usually needed for students to engage in reflection in a meaningful way. The Three-Step reflective framework and template was developed as part of a Doctorate research study to scaffold reflective writing. The findings indicate that the intervention was successful at supporting learners to reflect beyond simple description of events and experiences.

In this presentation, the ways in which lecturers and students are using portfolios (blogs and wikis) to assist teaching and learning at tertiary level will be demonstrated. The benefits of using a Reflective Framework to support reflection on experience, and develop reflective practice in a digital portfolio will be discussed. Also the ways in which open digital portfolios can be used to assist students to express themselves, and connect with others to become more visible will be explained.

### Biography

#### **Bronwyn Hegarty**

Supporting academic staff with curriculum design and development for flexible learning is my main role in the Educational Development Centre at Otago Polytechnic. Additionally, I provide staff development training and support in the use of a wide range of technologies — including free online stuff, Web 2.0, Elluminate, Mahara, Moodle etc. — for teaching and learning, and for online collaboration with colleagues. I am a Doctorate in Education candidate with the University of Wollongong. My thesis is investigating the use of a Three-Step Reflective Framework and template to support the preparation of the evidence practitioners need to prepare for professional electronic portfolios.

## The role of ePortfolios in an adaptive learning framework

**Paul Houghton**

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### Abstract

KT Studio's Adaptive Learning Framework involves the design and development of a learner-centric environment using appropriate technologies to support many different learning contexts that combine teaching, RPL, tracking and individual portfolios.

Development of this framework has taken an applied research approach towards enablement and support of these new approaches towards teaching and learning. The innovations make the most of emerging market opportunities, current design theory, and emerging technology.

The Framework has been important for building relevant and responsive learning institutions and for addressing workforce development in line with current economic drivers and a volatile economy. Under these conditions, social and economic prosperity depends on the health and functionality of education and training.

Three applications of this framework include Accelerated, Transition and Embedded Learning. Although conceptually separate, there are similarities and the intent is that they work side by side as part of the wider Framework.

The Adaptive Learning Framework has 4 components: Learning Experience, Learning Resources, Tracking Matrix and ePortfolio. The ePortfolios component is an integral function as it plays the role of the primary interface between all components of the framework, bringing a more holistic view to the way tools and systems are developed. This interface then fosters the cohesive relationships between students and the institution, rather than the ePortfolio being seen as a standalone tool it is instead the main window of engagement.

The ePortfolios component has the following elements

- Identity management
  - Authentication of individuals and contributions
  - Interests; current and emerging areas of priority and attention
  - Persona; individual management of multiple identities
  - Portability and mobility; between the individual, institution and employer
- Contribution by discussion
  - Multimedia
  - Repository
- Professional and personal networks
  - Groups
  - Individuals

- Showcase and exhibit
  - Resume, curriculum vitae
  - Work samples
  - Past projects
- Reflection
  - Subscriptions
  - People
  - Content
  - Themes and concepts
  - experts and mentors
- Planning
  - Career planning
  - Skills gaps
  - Identified emerging training opportunities
  - Pathway planning
- Progress and tracking
  - Courses and units of competence
  - Work tasks by hours or competence
  - Employability and foundation skills

Current application of this Framework at Polytechnic West has included the following projects:

- Fast tracking apprenticeships for Bakers
- RPL with ePortfolios for Lab Technicians in Regional WA

This paper specifically addresses the following theme and sub-themes:

- *Implementing ePortfolios - successes and sustainability*
  - EPortfolios in the Web 2.0 environment
  - Technical standards supporting ePortfolios
  - Challenges and opportunities in ePortfolio implementation
  - Accessibility and ePortfolios
  - Sustainability and ePortfolios
  - Communities of practice

## **Biography**

### **Paul Houghton**

Paul is the Director of KT Studio, an applied research group in Polytechnic West (Western Australia), where he is applying new approaches to the design of systems and use of emerging technologies to support complex cognitive tasks. This includes how we learn, make decisions and innovate.

The core of this work is in supporting the fields of training, sustainable management, policy, interdisciplinary decision-making, and innovation systems. Complex, adaptive environments are designed and implemented to connect networks of people, information and interactions. A total redevelopment of the Polytechnic West websites in 2009, now run in the cloud, led to new tools to track

on-the-job learning, personal portfolios and targeted gap training being developed by KT Studio.

Paul has spent 35 years in a career in information and knowledge management to bring him to the point where many underlying philosophies and principles are now being applied to new environments, business models, expectations and possibilities.

## Delivering on the promise — a model for successful ePortfolio implementation

**Peter Johnson**

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**Catherine McDermott    Russ Chess-Williams**

School of Health Sciences, Bond University

### Abstract

While ePortfolios are becoming commonplace in Australian universities, the manner in which they are used by faculty and students is diverse, and to date they have not always delivered on their promise to improve learning, engage students and improve employment prospects and transition for graduates. This paper reports on ePortfolio implementation in the School of Health Sciences at Bond University, outlining the results of a pilot study and demonstrating how the lessons learned have been applied to develop our current ePortfolio program.

In 2009, a pilot study was conducted to investigate effects of ePortfolio use on performance and engagement with graduate attributes. Students enrolled in the first semester of the Bachelor of Biomedical Science were provided with an ePortfolio and required to submit three assessment items. Students from other degrees enrolled in the same subjects did not use the ePortfolio and served as a control cohort. The mean mark awarded to assessment items for the ePortfolio group was significantly higher ( $P < 0.05$ ) than the control group, and the ePortfolio cohort received a greater proportion of semester HD/D grades. Questionnaires revealed that ePortfolio use increased awareness and of graduate attributes and perceived abilities to plan and reflect on academic progress. Over the remainder of 2009, ePortfolio was not formally used but student use was tracked. While the majority of students had indicated that they would continue to use the ePortfolio, less than 10% added additional artefacts in this time.

Learning from this experience, we developed a school-wide portfolio implementation plan that commenced in January 2010. To increase student use and maximise the benefits of reflective practice, we have adopted a scaffolded approach where ePortfolio use is structured across every semester of each program in three distinct phases. In the Foundation Phase (semester 1), ePortfolio use is formally embedded within a core subject. Students are introduced to ePortfolio, adding personal information and completing tasks to learn how to organise content, complete reflections and create action plans. In the Collection and Reflection Phase (semesters 2–4), students informally build on their portfolios, adding artefacts, evidencing achievements and reflecting on learning. Finally, the Capstone Phase (semesters 5–6) returns to a subject-embedded approach to complete and

complement the ePortfolio. It is anticipated that this approach will result in most students developing an ePortfolio that will not only deliver on its promise to enhance learning, but also function as a useful resource for supporting graduate employment.

### **Biography**

#### **Peter Johnson**

Dr Peter Johnson has more than 15 years of experience as an educator in over 30 biomedical and allied health degree programs across 5 universities. His education research interests focus on student-centred approaches to lifelong learning, including self and peer assessment methods, problem-based learning. In his current role at Bond University, Peter delivers two core first semester Health Science subjects and also convenes the Faculty Honours program, providing an insight into the important issues facing students as they transition both into, and out of university into the workforce. Dr Johnson has received multiple teaching and learning research grants and was awarded an ALTC Citation for Outstanding Contribution to Student Learning in 2008.



## The role of ePortfolios in mentoring adult learners seeking professional certification

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### **Abstract**

Underpinned by an Outcomes Based Education (OBE) model that promotes a constructivist approach to reflective learning, since July 2006, *ACSEducation* has provided several on-line, open source e-learning environments within which IT practitioners at all levels may study to enhance their own particular skill sets with a view to seeking professional certification. Following an analysis of current research literature, the authors of this paper decided to test our present implementation of the ePortfolio environment in the PP unit of the CPeP *ACSEducation* program. Building on previous literature, the authors identified a methodological framework for our own investigations with a view to beginning a longitudinal study to add to investigations into student perceptions of: the role of mentors; the use of a professional skills framework and the ePortfolio environment in scaffolding adult professional education, particularly those seeking professional certification.

**Keywords:** *student perceptions, e-learning, mentoring, Professional Practice research (PPr), reflective practices, SFIA, professional certification*

### **1. Introduction**

Underpinned by an Outcomes Based Education (OBE) model that promotes a constructivist approach to reflective learning, since July 2006, *ACSEducation* has provided several on-line, open source e-learning environments where IT practitioners at all levels may study to enhance their own particular skill sets with a view to seeking professional certification. One of the *ACSEducation* programs offered is the mentored and collaboratively run Computer Professional Education Program (CPeP). This is offered for current IT practitioners seeking to hone specifically identified professional skills. CPeP is designed to enhance current work readiness skills through the acquisition of relevant, rigorous postgraduate-level subjects. The completion of 3 core subjects and 1 elective subject confers upon the graduand ACS Certified Professional (CP) status, as well as the option to articulate into a wide range of graduate diploma and masters programs.

Whilst undertaking this program, CPeP students are required to participate in a Professional Practice (PP) subject. The purpose is to help participants assess their current professional skills; plan medium term career goals (3–5 years) and map long

term achievement objectives within an identified specialist area. Three specific elements consistent within *ACSEducation* program delivery were identified by the authors as tools worthy of research in terms of possible impact on student perceptions of personally evaluated achievements within their required learning objectives and outcomes. The gathering of qualitative data of student perceptions in the role each of these components play(ed) in the successful completion of the PP unit was considered a valuable starting point in the accumulation of data on the role of ePortfolios within continuous professional development. The paper examines each of these tools in turn.

Briefly, the first tool offered within *ACSEducation* programs assists students in an objective, documented self-analysis of their own particular IT skills. It is an internationally recognised skills framework - the Skills Framework for the Internet Age (*SFIA*) — the structure of which aids participating students in identifying demonstrable, current levels of professional achievement across generic and specialised skills, mapped against specific measurable standards ([www.sfia.org.uk](http://www.sfia.org.uk)).

In addition to introducing a relevant taxonomy within which to structure professional career profile planning objectives, the second significant tool identified is tutelage from a personal mentor. The mentor, (chosen from senior IT practitioners with CP status), rather than a teacher or lecturer, guides mentees within the ePortfolio environment, to identify, structure and develop personal professional career profiles.

The third tool provided within this online environment is a personalised, professional electronic portfolio (ePortfolio) within which students can document and plan their professional life achievements, career plans and long-term goal objectives.

### 1.1 Research Aims

In order to better determine the efficacy of these tools in assisting the delivery of a practical, scaffolded approach to students' individual learning needs, the authors decided to conduct a pilot examination into student perceptions of the effectiveness of these tools. The third tool — the ePortfolio — was the medium within which the other two tools, the Skills Framework and the mentoring activity, are accessed.

Thus our initial research project was identified in terms of adding further data to current analyses of the role the ePortfolio plays in enhancing the delivery of measurable student learning outcomes; measuring student perceptions of mentor/mentee relationships, as well as indicating perceived adaptation of student participants to reflective learning processes and the perceived importance of the development of life-long learning skills.

In the first stage of this *ACSEducation* study, investigating the role of ePortfolios within adult online professional development education, the authors identified the need to base any examination of current subject offerings within the context of contemporary research literature pertinent to the subject. The particular intention was to identify suitable methodological approaches to framing student responses to perceptions of the ePortfolio environment in which they are asked to operate. Following the completion of a comprehensive literature review, one hypothesis the authors wished to test was whether an ePortfolio environment can be determined as an effective tool for creating a reflective learning environment. The findings of this

preliminary paper are intended to serve as a pilot study in what is proposed as a longitudinal study, or a concatenated explorative study, Stebbins, 1992. It is envisaged that subsequent papers will involve the compilation and analysis of larger data sets extended to include the perceptions of both students and mentors/tutors in the role the ePortfolio environment plays in the successful delivery of professional development subjects offered within other *ACSEducation* programs, with a view to identifying, recording and implementing any remedial actions required to improve positive educational outcomes in the acquisition of professional development certification.

## 2. Literature Review

The seminal step in our research project comprises a comprehensive literature review of research previously undertaken within this field of enquiry. The chief determining factor in the literature review selection criteria was an analysis of the types of methodologies used by previous researchers to examine on-line, open source learning environments within varying levels of educational delivery. The second objective was to identify what types of gaps were evident within the literature review conducted.

Following the compilation of pertinent literature, it quickly became apparent that previous researchers had undertaken varying research projects in the analysis of the role of the ePortfolio medium within educational delivery outcomes. For instance, Birenbaum & Rosenau, 1996, in their grounded theory analysis investigated the role of ePortfolios in assessing the development of lifelong learning skills within the professional development environment. Birenbaum & Rosenau placed reliance in earlier research conducted by Entwistle, 1991, and utilised Biggs' methodological measuring tool, the Motivated Learning Strategies Questionnaire (MLSQ, 1996) which is a self-reporting instrument aimed at assessing student's motivational orientations and the latter's influence in measuring student understandings of the efficacy of different learning strategies. This research project identified the importance of student attitudes towards learning and how the identification of attitudinal motivation influences individual student perceptions of the learning environment and its inevitable impact on their ultimate success within these learning environments (p. 214). Birenbaum & Rosenau, in summation, suggested a need to further analyse student perceptions of the online learning environment through the adoption of a mixed-methods research approach (p. 223). Zeegers' research project, 1999, measured student approaches to learning (SAL) through the adoption of the Biggs Study Process Questionnaire (SPQ) using a 5 point Likert scale which allowed for a factoring of both verbal and numeric scale ranking (Biggs, 1982, 1987a&b). Similarly, Nijhuis, 2005 examined the role of problem based learning in the context of student learning approaches, as driven by students' perceptions of the learning environment (p. 70), through the scope of an adaptation of Biggs' SPQ model. Ashcroft & Hall (2006) in their grounded theory approach examined student perceptions of the role of reflective practices in the ePortfolio environment in terms of continuing professional development (CPD). Baeten et al (2008), in their exploration of student experiences in relation to the ePortfolio as a tool for inducing deep approaches to learning suggested areas for further research to include longitudinal studies of ePortfolio experiences beyond traditional semester/term offerings as well as the inclusion of a control group offering data outside of the ePortfolio environment. Following Ellis et al's, (2004), blended learning study using

a phenomenographic model to analyse the role of student perceptions of the quality of what and how they study influences their ultimate performance (p. 75), Bliuc et al, (2009) in their relational research study placed reliance in Entwistle & Biggs' models of student learning when analysing political science student responses to closed questions in relation to student perceptions of whether online learning environments enhance their face to face teaching experiences. Both studies' findings suggested a correlation between students' conceptions of learning and their subsequent approaches and academic performances. Bliuc et al recommended further extensive research over a wider range of disciplines, involving larger samples and using a range of instruments to further determine the effects of student perceptions in the effects of the online environment on ultimate educational outcomes (p. 522). Hegarty's, (2009) choice of research methodology involved a case study of 7 students, the tool of measurement the students' use of reflective writing, qualitative data was collected in the form of assignments and interviews, and descriptive data from surveys was also gathered to help build individual cases about the participants (p. 458). This research was underpinned by a 3 step reflective framework, which examined the ways scaffolded facilitation could aid students in their ePortfolio deliveries. George-Palilonis & Filak, (2009) added to current knowledge with a mixed study conducted over two semesters of student perceptions of the efficacy of the online environment in relation to maintaining weekly journal entries. These researchers noted that technical anxieties, a component they had identified as a potential problem for the student population, dropped sharply in either the 3<sup>rd</sup> or 4<sup>th</sup> week of tuition and technical confidence strongly featured thereafter in student journal entries (p. 252). McLeod & Vasinda, (2009) undertook an exploratory study of the impact of digital portfolios on teaching methods and constructive reflection within a younger population – primary school children. Their methodology of choice involved the use of design-based research, a mixed design method that utilised audio podcast reflections as one of the tools of measurement. In addition, focus group observations informed this research project. Tochel et al (2009) conducted a comprehensive literature review on the effectiveness of portfolios within postgraduate healthcare programs. A literature search was conducted for articles describing the use of a portfolio for learning in a work or professional study environment. It was designed for high sensitivity and conducted across a wide range of published and unpublished sources relevant to professional education. No limits for study design or outcomes, country of origin or language were set. Blinded, paired quality rating was carried out, and detailed appraisal of and data extraction from the 56 articles from 10 countries was managed using an online tool developed specifically for the review. Findings were discussed in-depth by the team, to identify and group pertinent themes when answering the research questions (p. 320). Tochel et al's literature study findings suggested there is good evidence that, if well implemented, portfolios are effective and practical in a number of ways including increasing personal responsibility for learning and supporting professional development. Of further interest is their conclusion that a well-informed mentor can have considerable impact on [ePortfolio] uptake, especially when regular feedback is given (p. 337). Martinez-Arguelles et al (2010), introduced research measuring student users' perceptions of the quality of e-learning services offered in higher educational on-line courses through a case study of an on-line university's delivery. The methodology used to measure student responses was the Critical Incident Technique (CIT) which uses a survey to obtain responses to a catalogue of critical incidents that have already been identified in the

initial stage of data collection by randomly selected students (p. 153). One of the findings from this research project was the seminal role students attach to the learning process as the main quality dimension in their assessment of the quality of e-learning services (p. 156).

Following an analysis of the outlined literature, the authors of this research paper decided to test the present implementation of the ePortfolio environment in the PP unit of the CPeP *ACSEducation* program using the findings of the researchers identified above with a view to framing our own investigations and adding further investigations into student perceptions of: the role of mentors, the use of a professional skills framework and the ePortfolio environment in scaffolding adult professional education, particularly those seeking professional certification.

### 3. Method

As previously indicated, the first step in this research was a comprehensive review of the literature within this field which influenced by Tochel et al's (2009) project, comprised of 17 articles from 5 countries, in order to determine the types of research previously undertaken and perhaps, more importantly, the types of methodological approaches utilised in order for the authors to identify effective frameworks to underpin their own intended current and future research projects. In light of the commitment of *ACSEducation* programs to an OBE framework, it is not surprising that this research is underpinned by a constructivist learning theory framework, a methodology that recognises the centrality of the learner's involvement in creating meaning as a result of deliberate mental engagement (Biggs, 1996). In other words, this preliminary paper detailing the structure of our research project, the introduction of the chosen methodological framework for what is envisaged as a longitudinal study and the early findings in our research project, is reliant in Biggs' argument that the learner is central to the learning process, rather than relying on direct instruction from the teacher, or in the CPeP case, the mentor as 'the transmitter of all knowledge' (p. 348). Primarily influenced by the research methods offered by Entwistle, (1991), Birenbaum & Rosenau, (1996) and Zeegers, (1999), the authors decided to use a questionnaire instrument framed within a 5-point Likert interval and verbal scale to rate student' perceptions of the *ACSEducation* online environment in relation to — ease of use, influence in the facilitation of mentor/mentee relationships and the efficacy of the *SFIA* skills framework in structuring measurable learning outcomes.

Since one gap the authors identified within the literature review was the exclusion of student perceptions from those who defer or withdraw from online open source study environments, it was decided to include all identifiable PP enrolees within the questionnaire survey roll out, rather than merely those currently engaged within the medium or who had successfully completed the subject.

Utilising the free online survey software and questionnaire tool *Survey Monkey*, the authors compiled 16 questions, 4 of which were open ended, the others comprised of rating questions which asked participants to position each factor on a companion scale of either numeric or verbal ranking, thus offering the researchers the opportunity for interval scale ranking when scoring the received responses. The questions chosen by the authors to frame this research project concerned both the program's form of delivery and its content. The survey questions were structured around four points of specific research interest:



- Measure student perceptions in the role the ePortfolio plays in the achievement of the content of PP.
- Investigate student feedback relating to the role the ePortfolio component plays in establishing mentor/mentee engagement. Is it a satisfactory vehicle?
- How does reflective learning score in student ratings in terms of perceived influence in individual student engagement?
- What are student perceptions concerning the *SFIA* self assessment process — is it considered suitable and objective in measuring the skill levels of the students?

#### 4. Initial Data Set Compilation Findings

Thus framed, this research project initially identified the delivery of a questionnaire instrument to 94 participant PP students, who had either successfully completed PP, are currently in the process of completing PP, or have enrolled in the PP subject and subsequently deferred or withdrawn from the subject (but not necessarily other CPeP units). An email was sent to the identified cohort to invite their participation in the research. The message also explained the project's prosumer (rather than consumer) focus in determining future program delivery and identified the online survey link for those who wished to participate.

However, it was soon established that not all of the initial sample population had engaged within the specific Mahara ePortfolio environment being measured. Thus a second roll out of the measuring instrument took place following further refinement of the potential data sets, excluding those PP students who had studied the subject prior to T0109. Sixty four (64) participants were identified as potential respondents, who split into 3 specific data sets. Thirty-one students were identified as having been enrolled within the PP subject who had either successfully completed or were currently engaged in completing Mahara ePortfolio activities. Thirteen students had withdrawn from the program since Term 1 2009, and 20 students within a similar time frame had deferred their enrolment in the PP subject, though not necessarily other CPeP subjects, due to current work commitments, change in career plans or other life influences.

The survey questionnaire was ultimately completed by 19 of the 64 PP students who had been asked to complete the ACSEducation online questionnaire survey. Prospective participants were given the choice of providing anonymous feedback. Of the 19 respondents, 12 choose to remain anonymous whilst 7 respondents revealed their identity. Eleven (11) of the 19 respondents gave individual feedback when questions prompted for additional information.

Initial analysis of the 7 identified respondents has added interesting substrata to the demographic makeup of this particular ACSEducation survey. Whilst three of the seven students are currently completing the PP subject and one student has already completed, one respondent has withdrawn from the program. One student identified as a deferral in T0109 has recommenced the PP subject in T0210 with the seventh student re-enrolled in the PP subject due an initial inability to complete the requisite subject requirements within the first year of study.

Currently the authors are working on analysing the responses received from these 19 respondents. It is the findings from these data sets which will be presented at the ePortfolio Australia conference in November 2010.



## 5. Conclusion

This preliminary paper detailing the structure of our research project, the introduction of the chosen methodological framework for what is envisaged as a longitudinal study and the early findings in terms of data analysis is intended to offer further data to supplement current educational literature in an exploration of the findings from a pilot study investigating student perceptions of the role of the ePortfolio environment in mentoring adult learners seeking professional certification. When presenting the analysis of the data gained from the administered questionnaire answers relating to both closed and open-ended questions, the authors hope to determine whether CPeP PP students perceived the ePortfolio component offered within our on-line educational program as a successful medium within which to first develop demonstrable student engagement with mentors. Secondly, we want to know whether the concept of reflective learning could be easily grasped and self-reported as a positive learning conduit. Does the ePortfolio medium assist in facilitating student-centred learning and an ability to demonstrate a solid understanding and application of the required learning outcomes?

Using the results from this particular *ACSEducation* program study as a pilot study for future research into other programs — particularly the Professional Year Program, a 44 week work readiness program intended to prepare international postgraduates for the domestic employment workforce — to analyse student perceptions of the role of ePortfolio participation in particular, the authors identified several key questions they wished to address. Based on the literature reviewed, it is clear that overall the evidence gathered in respect of student perceptions in the use in portfolios is positive.

We would suggest that Zeegers' identification of student approaches to learning as a dynamic process influenced by individual understandings of the perceived context, content, task difficulty, relevance and associated workload (p. 1) is an important contribution in the assessment and analysis of student perceptions of the efficacy of online environments and is worthy of further analysis. Similarly Hegarty's (2009) preliminary case study which examined the role of reflective writing practices within the development of student skills is another area of research identified as requiring further investigation. In terms of our own research we have already determined suitable amendments for future research projects, these include:

1. That further refinement of the questionnaire instrument includes an exploration of peer review influence within the ePortfolio environment.
2. A further study is undertaken of the Professional Year Program students' perceptions of the ePortfolio environment

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## Troublesome ePortfolio implementation: a threshold concepts approach to considering institutional maturity

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### **Abstract**

This paper outlines a new approach to exploring the maturity of institutional ePortfolio implementation that has been informed by research into ePortfolio use in UK Further Education and Higher Education institutions as part of the JISC (Joint Information Systems Committee) e-Learning Programme. The analysis of twenty one recently funded projects involving the use of ePortfolios in the UK suggested that ePortfolio implementation is particularly complex in part due to the number of stakeholders involved, the contexts in which ePortfolios can be applied and the number of purposes they can have. This research suggests that there are threshold concepts (Meyer & Land, 2003) related to ePortfolio implementation that are associated with misconceptions and hence represent barriers to implementation (Joyes et al., 2010). Once the threshold has been passed through a new and irreversible perspective is attained. This perhaps explains why those new to their implementation fail to comprehend the extensive guidance available. These threshold concepts, expressed from a design for learning perspective, which assumes a mature understanding of ePortfolio use, are:

- The purpose needs to be aligned to context to maximise benefits;
- The learning activity needs to be designed to suit the purpose;
- Processes needs to be supported technologically and pedagogically;
- Ownership needs to be student centred;
- Transformation (disruption) needs to be planned for.

The paper will extend these ideas into new perspectives on analysing institutional maturity in ePortfolio use that is guiding research into effective ePortfolio implementation in the UK and wider. The intention is to develop a fully researched maturity model for ePortfolio implementation that is grounded in pedagogic implementation rather than focussing primarily on institutional processes as represented in current models (Hartnell-Young, 2007; Aep, 2008; SURF NL, 2007).

## Biography

### **Gordon Joyes**

Dr Gordon Joyes is Associate Professor in e-Learning in the School of Education at the University of Nottingham, UK. He leads and teaches on a range of online courses and supervises research students. He was the ePortfolio consultant for the Joint Information Systems Committee (JISC) in the UK from 2007–9 advising on national policy and strategy. A major publication arising from this work relating to ePortfolio implementation won the outstanding paper award at the ascilite 2009 conference Auckland, New Zealand and was subsequently published in *AJET*. He is currently leading the JISC funded ePI study that is exploring large scale ePortfolio implementations in the UK that will include case studies from New Zealand and Australia.

## The use of an ePortfolio in assessing informal learning

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### **Abstract**

The last ten years in UK universities have seen the rise of student awards, official endorsements of student achievements in informal extra-curricular and co-curricular activities to enhance student employability and encourage skills development. In most cases, staff support for this learning is relatively light. The module offered by the Centre for Integrative Learning as part of the University of Nottingham Advantage Award, unusually made the use of ePortfolios for formative assessment central, as significant emphasis was placed on each student's reflection on an episode of informal learning over time, supported by interactions with a volunteer staff coach. The module's aim was to foster the student's awareness and analytical skills and give them practice in understanding, interpreting and presenting their informal learning experiences in relation to their value for the World of Work. The module activity design was informed by effective practice (Joyes et al., 2010) and consisted of three phases: a training phase; an extra-curricular activity phase in which evidence was gathered and skills development was reflected upon through the use of the ePortfolio and feedback was given by a coach; a presentation phase in which the ePortfolio evidence was developed as a presentation to an employer who gave feedback — the coach was involved in both formative and summative assessment in this phase. The research set out to explore the role of the ePortfolio and the coach in supporting student understanding of the value of their informal learning. Naturally occurring data (Bryman & Burgess, 1994) was used — the ePortfolios were private and not available except for six final presentations for which permissions for use in the research were obtained. Further data gathering would have been intrusive as it might have affected retention on the voluntary award. 32 students began and finished phase one and 11 persisted through phases two and three to completion. The coaches who supported the process were mainly non-academic volunteer staff. The presentation will explore the nature of the extra-curricular activities, the value of the ePortfolio within this complex pedagogy and the value and role of the coach in supporting both formative and summative assessment of the module.

## Biography

### Gordon Joyes

Dr Gordon Joyes is Associate Professor in e-Learning in the School of Education at the University of Nottingham, UK. He leads and teaches on a range of online courses and supervises research students. He was the ePortfolio consultant for the Joint Information Systems Committee (JISC) in the UK from 2007–9 advising on national policy and strategy. A major publication arising from this work relating to ePortfolio implementation won the outstanding paper award at the ascilite 2009 conference Auckland, New Zealand and was subsequently published in *AJET*. He is currently leading the JISC funded ePI study that is exploring large scale ePortfolio implementations in the UK that will include case studies from New Zealand and Australia.



## Using ePortfolios to assess Engineering Interns

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### Abstract

#### Context

The ANU College of Engineering and Computer Science has implemented a new course for 2010, the Engineering Internship. The aim of this course is to use the internship experience to assist students to develop their engineering skills and practice. Students were placed in industry, working full-time and were assessed for academic credit. The curriculum, that is the content and learning processes, was defined by the work and internships were offered in areas that matched the aims and content of the ANU Bachelor of Engineering program

#### Assessment

The four assessment items for this program were flexible enough to allow the unique content of the work experiences, existing and new technical knowledge, Engineers Australia competencies (Stage 2), and other work-place issues to be integrated. Two of the assessment items revolved around the ePortfolio:

- **Internship ePortfolio:** Students were required to keep a reflective journal of tasks and experiences over the course of their Internship. In their journal entries, they were to include written reflections, as well as photographs, diagrams, videos, audio files and any other artefacts, as evidence of the tasks and experiences undertaken at the Internship. They also wrote three pieces addressing value-expectancy for the internship; one each for the start, mid-point and end of the internship.
- **Internship report:** On completion of their Internship, students wrote a report addressing the Engineers Australia Stage 2 competencies that had been selected as most relevant for the Internship. Students were required to provide evidence from their work or experiences that demonstrate achievement of the competencies.

The weekly journal entries were primarily developed using the blogging tool in Mahara with integration of images and documents to support the blog posts. Students presented their work in a View, which they shared with the course convenor and workplace supervisor.

## Conclusions

A lot of one-to-one support and resources were required to help students become familiar with the system and to overcome the teething issues around submitting work in Mahara. Overall, the response has been mixed. Students appreciate the flexibility of accessing the work from any location; however find the system to be limiting in regards to the presentation of their work.

## Biography

### Lauren Kane

Lauren Kane is an Educational Developer working in the Flexible Learning Unit at the ANU College of Engineering and Computer Science. Her background is in secondary school teaching, where she taught yrs 7-12 in Food Tech, Textiles, Computers, Metal and Woodwork.

In the Flexible Learning Unit, Lauren provides advice and support to teaching staff on educational design and constructive alignment; teaching strategies and techniques; structuring course materials for pedagogically effective on-and-off campus delivery; and the appropriate use of educational technologies including Moodle, Articulate, Mahara and Wimba.

She is also involved in the Hubs & Spokes project with UniSA where together they are developing and sharing blended courses in undergraduate and professional postgraduate engineering programs and introducing a national internship program to develop student engineering skills.

## Blended (hybrid) learning at Australian Industry Trade College Gold coast, Australia

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### Abstract

This Case Study discusses the implementation of hybrid learning within a senior secondary college environment — Australian Industry Trade College Gold Coast. It explores the most important factors that were considered during the process of transformation from traditional, classroom based course delivery to flexible, student centred, ICT rich hybrid teaching and learning.

*Australian Industry Trade College is an Independent Senior School (years 11 and 12 only) and RTO that provides opportunities for young people who are choosing Trades as their career of first choice while completing their senior education. During the economic slowdown and the continuous transformation of the industry landscape in the Gold Coast area, the initial structure (at times) was not supported by all companies and businesses in the region. They needed additional flexibility in timetabling and course/subject delivery.*

The Case Study investigates the need for understanding the purpose of this transformation for all involved in the process (students, parents, teachers, industry stakeholders, administration and state educational authorities) at the College. The idea of making the best of available LMS required a holistic approach and effective use of communication, tracking, course delivery tool as well as integration (where possible) with other ICT packages (videoconferencing, learning objects, interactive websites). Jay McTighe's 'Understanding by Design' curriculum framework has been adopted as the general working discourse while planning and designing the courses.

Very early into the process of course design it was clear that existing models of practice, mainly derived from higher education practices, needed to be adjusted to the particular age of our students as well as their interest and language discourse in general. This resulted in clear and short instructions, consistent page layout combined with an attractive visual component. Students needed to be motivated and engaged with their learning (interactive approach to instructions and in particular assessments, e.g. effective use of learning objects and relevant interactive websites), in control of their learning (self-paced learning, choice of assessment items) and supported during their learning (face-to-face component of hybrid learning within structural timetable, tutorials, etc).

The courses designed for the College are open to students' and other stakeholders' feedback. Hence, the changes of the design principles are not only possible but expected, welcomed and perceived as the insurance of

quality, accuracy, relevancy and current trends (action learning principles in course design process). In addition, the interviews, anecdotal data, example of practice and students' work and survey results are presented to support the main findings of the college journey. The hybrid learning is the way to teach in the 21st century as it caters for long needed flexibility of course/subject delivery. It provides the platform for easy and effective implementation of ICT within teaching and learning and finally, provides the balance between computer mediated and traditional face to face classroom practice.

### **Biography**

#### **Olivija Komadina**

Olivija Komadina leads a team of innovators in Australian Industry Trade College Gold Coast in the implementation and development of hybrid learning within senior secondary context. Her masters degree research (Deakin University, Melbourne) about videoconferencing and distance education was used for professional development in the Northern Territory Department of Education (for distance education practitioners).

Her current work is focused on course content design, effective use of learning objects and online assessment.

## PebblePad: from pilot, to implementation, to evaluation and beyond ...

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### Abstract

The University of Wolverhampton is a multi-campus of approximately 22,000 students known for its successful widening participation, having the highest UK intake of students from working class backgrounds. It is also known for its use of blended Learning and ePortfolio based learning. Between 2000 and 2005 all UK HEI's were asked to develop opportunities for all students to engage with personal development planning (PDP). Wolverhampton developed a process for PDP but could not find a 'tool' for its delivery, it was from this need that PebblePad was born. PebblePad was piloted during the academic year 2004/2005 and given to all staff and students at the start of the academic year 2005/6. Since then the use of the system has grown with approximately 50,000 accounts being opened since 2005, Pebble is used within learning and teaching across all areas of the curriculum for example since 2005 there have been 73,598 pieces of work submitted through PebblePad for formative or summative assessment.

This presentation will take people through the institutional issues of implementing the system, offer examples of good practice and show how currently it is planned to be used within a redesigned undergraduate curriculum. Finally it will address how ePortfolio based learning could support the development of graduate attributes.

### Biography

#### **Megan Lawton**

Megan is based at University of Wolverhampton in the UK. She is currently leading the university initiative to develop Graduate Attributes. Megan is involved in developing Blended Learning pedagogies particularly ePortfolio based learning and Patchwork Texts and has presented both nationally and internationally in these areas.

Until June 2010, Megan was the Assistant Director of the Centre of Excellence in Teaching and Learning (CETL) Critical Interventions for Enhanced Learning (CIEL).

Megan's personal areas of interest and expertise include: Graduate Attributes and employability, Patchwork text and Academic literacies, Personal Development Planning (PDP) and ePortfolio based learning and finally visual research methodology including using Soft Systems Methodology (SSM), Auto Driven Photo Elicitation and multimedia for reflexivity.

## The standards analysis and ePortfolio design in a learning portal platform environment

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### Abstract

The purpose of this study was to develop an ePortfolio as a student learning portal with Microsoft Office collaborative environment. The System Analysis and Design methods were applied to this study. Related ePortfolio theories, literatures, and popular cases were explored, analysed, identified, and adopted to design an e-learning portfolio template with knowledge management functions on Microsoft Office SharePoint Server system. There were 32 graduate students who were also in-service technology education teachers with knowledge management and e-learning backgrounds, were asked to assess the template module with Technology Acceptance Model applied for user acceptance of the system. The findings showed that the users accepted the e-learning portfolio and the 'Attitude toward Using' was the factor that had the strongest direct effect on behavioural intention to use the system. It was believed that the functions for e-learning portfolio were suitable on the SharePoint knowledge management portal and the portfolio standards identified could be provided for further reference and development.

**Keywords:** *ePortfolio, knowledge management, system development, MOSS, SharePoint Server, module, template, student portal, TAM*

### 1. Introduction

Although research about ePortfolios is not in a very long time, Barrett (2005) differentiated three directions for the use of an ePortfolio, in which there are portfolios for learning that are based on a structured model, they emphasize the individual process, the reflection and learning plans. Lorenzo and Ittenlson (2005) judged that ePortfolios can be used with a program for following the development of learners then managing and assessing their performance. EPortfolios are considered as instruments increasing learning ability (Firssova & Brinke, 2007).

Meyer and Latham (2008) found out that ePortfolios are used in many universities to monitor student study and evaluate data for acceptance goals of the program or unit level. Penny and Kinslow (2006) indicated that ePortfolios show students' work and knowledge, and they are managed better than paper document. EPortfolios tend to shift the situation of higher education and are very important in universities (Batson, 2002). Moreover, the important factors of increasing



satisfaction of using ePortfolios are to further improve reflection of learning as well as to set up knowledge of students themselves.

However ePortfolio cannot be implemented without any website or web portal. The increasing popularity of Microsoft Office SharePoint (MOSS or SPS) was developed for the purpose of corporate or institutional platform with organizational group collaborative efforts in knowledge management. It is very appropriate and can be applied to educational e-learning. To implement an appropriate ePortfolio in MOSS system as a learning portal for students is a very worthwhile effort for educators.

## 2. Research Purpose and Objectives

The purpose of this study was to develop an ePortfolio as a student learning portal with Microsoft Office collaborative environment. It was to support student learning as well as teaching activities. The research objectives are listed below.

1. To analyse the functions of ePortfolios as guideline standards.
2. To design an e-learning portfolio template on SPS.
3. To assess the designed e-learning portfolio template on SPS
4. To provide implications and suggestions to related professions

## 3. Related Literature

### 3.1 Types and Functions of EPortfolio

Most ePortfolios are hybrids of developmental, showcase, and assessment (EPortfolio portal, 2004). *Developmental ePortfolios* indicate the improvement and development of student skills. They consist of self-assessment and reflection (Greenberg, 2004). They are suitable for learning individually and for setting up personal development plans (Curyer, Leeson, Mason, & Williams, 2007). Students can save their assignments after they finish (Hiller et al., 2007) and plan the users' development (Tartwijk & Driessen, 2004). They allow students to communicate with teachers and indicate improvement of students' skills. Especially, students can assess and reflect on the learning process (Logofătu, Gheorghe, & Mateiaș, 2006). Developmental ePortfolio functions are presented in Table 1.

**Table 1:** Developmental EPortfolio Functions

Developmental ePortfolio functions	Applications
Personal KM	indicate the improvement and development of student skills
Peer Evaluation	consist of self-assessment and reflection, provide candidates with opportunities to generate, record, reflect, and assess their development and performance
Learning Folders	suitable for learning individually, for setting up personal development plans and planning the owner's development, construct information and put it in one place
Personal Folders	store assignments and provide information, audio, video and graphic
Search	find a student's academic profile
Announcements	read teachers' comments
Discussion	communication between students and teachers

(Adapted from Greenberg, 2004; Curyer et al., 2007; Hiller et al., 2007; Tartwijk & Driessen, 2004; Logofătu et al., 2006)

*Showcase ePortfolios* (Greenberg, 2004) are to emphasize student work, to share specific examples of work. The users can set passwords for different audiences, arrange and manage documents. They give examples or evaluation of student work (Tartwijk & Driessen, 2004). Moreover, showcase ePortfolios show students' skills and work standard (Logofătu et al., 2006). They show the best standard of learning that students have reached. Students can exchange information with their partners, teachers and reflect on the skills or knowledge they have learned. Besides, it is easy for them to see the curricular, class information through the bulletin board (Kheng, 2005). Showcase ePortfolio standard functions are presented in Table 2.

**Table 2:** Showcase EPortfolio Functions

Showcase ePortfolio functions	Applications
Learning Folders	emphasize student work, share specific examples of work and control who can see these collections
Account Management	users can set and send passwords for different audiences, control users' access
Personal Folders	users can construct and manage documents
Bulletin Board	give examples of student work, evaluation of the work
Peer Evaluation	show students' achievements, display students' work, curricular activity
Opinion Survey	show the highest level of ability that students have achieved
Blog	reflect on the skills or knowledge and the level of students
Discussion	communicate what students have learnt to peers, teachers

(Adapted from Greenberg, 2004; Tartwijk & Driessen, 2004; Logofătu et al., 2006; Kheng, 2005)

*Assessment ePortfolios* (Tartwijk & Driessen, 2004) are usually organized around items such as the candidates' products, evaluations, photographs and video-recordings. They demonstrate students' ability and skills, allow students to share information and discuss with their partners (Greenberg, 2004) and demonstrate the users' abilities (Curyer et al., 2007). In addition, assessment ePortfolios evaluate students' skills basing on the leaning achievements, standard and performance. They can be used as a means of communication between students and their peers (Logofătu et al., 2006). The learning results and accomplishments of students can be accessed and scored (Kheng, 2005). The functions of assessment ePortfolio are illustrated on Table 3.

**Table 3:** Assessment EPortfolio Functions

Assessment ePortfolio functions	Applications
Opinion Survey	show students' ability and skills
Personal Folders	store photographs and video-recordings
Discussion	students can discuss with teachers online
Peer Evaluation	show students' learning achievements, assess users' ability
Planning Tools	score and assess students' learning results
File Transfer	users can share work with peers
Blog	users can reflect on peers' achievement and progress

(Adapted from Greenberg, 2004; Curyer et al., 2007; Tartwijk & Driessen, 2004, Logofătu et al., 2006; Kheng, 2005)

Reflective portfolio, as Kendle (2001) pointed out that students should reflect on their experiences, is the purpose of this use. Reflective portfolios are considered a more systematic approach to assess student learning. Students choose objectives of learning and justify the learning objectives (Gallagher, 2001). It helps students with ideas on particular issues and help students understand subjects. Students write about their feelings of what they achieve from objectives of the course (Kendle, 2001). Hiller et al. (2007) also confirmed that a reflective ePortfolio has the function of reflecting personally on the lesson content and planning the users' development. Students can record, confirm and reflect on the achievements of the learning results (Cotterill, Skelly, & McDonald, 2004). The standard Reflective ePortfolio functions include Wiki, Planning Tools, Peer Evaluation, Online Help, Learning Folders, Blog, Personal Folders, Bulletin Board and Opinion Survey. (Table 4)

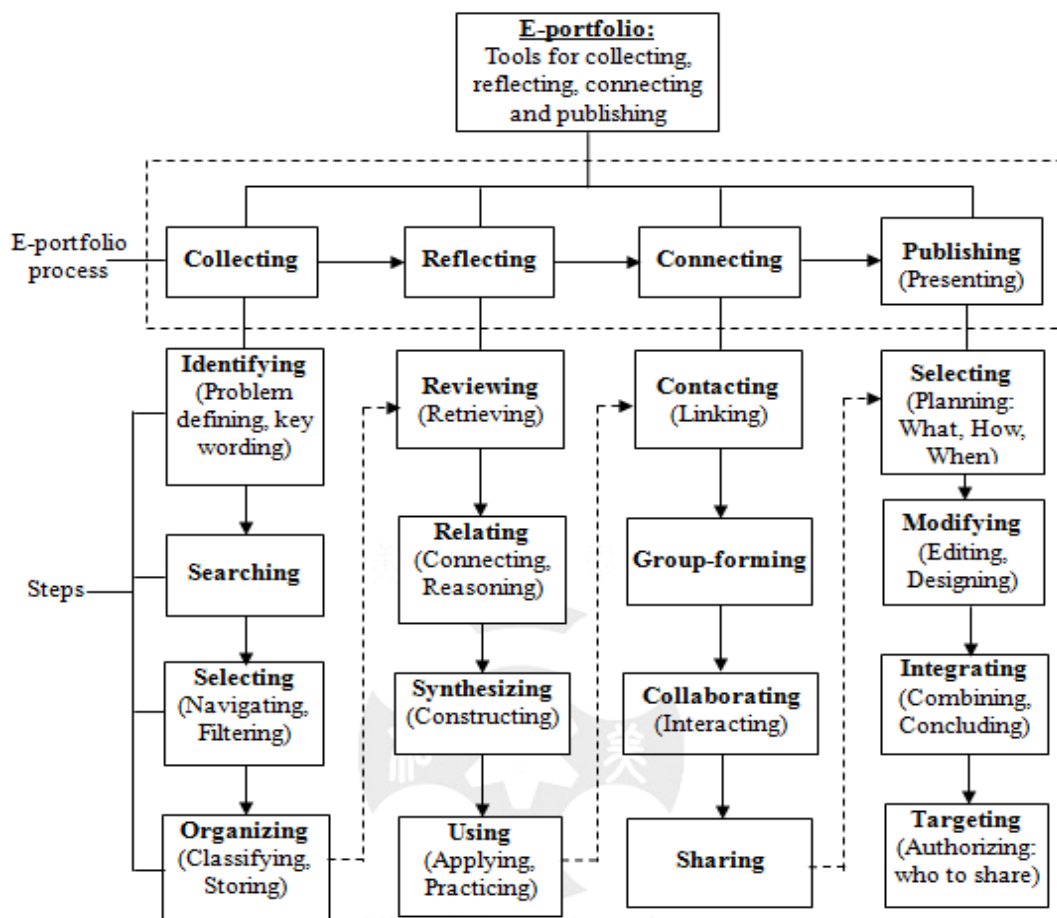
**Table 4:** Reflective EPortfolio Functions

Reflective ePortfolio functions	Applications
Wiki	reflect on students' experiences
Planning Tools	improving curricular and taking approaches to learning
Peer Evaluation	assess student learning
Online Help	help students with ideas on particular issues and help students understand subjects
Learning Folders	students write about their feelings of what they achieve from objectives of the course
Blog	personally reflect on the content of the course and what it means for the owner's development, the achievement of learning results
Personal Folders	store documents
Bulletin Board	integrated with on-line curricula
Opinion Survey	adjust the learning objectives

(Adapted from Kendle, 2001; Gallagher, 2001; Hiller et al., 2007; Cotterill et al., 2004)

### 3.2 EPortfolio Development process

Hiebert (2006, as cited in Hiller et al., 2007) developed the ePortfolio model integrated from the above four types of ePortfolios with the four stages — collecting, reflecting, connecting and publishing. This study used the ePortfolio development process of Hiebert (2006) to develop the e-learning portfolio. The proposed ePortfolio model was elaborated with steps and displayed in Figure 1 below:



**Figure 1:** EPortfolio Model

(Source: Hiebert, 2006 as cited in Hiller et al., 2007; Barrett, 2000; Crane, n.d.; Danielson & Abrutyn, 1997)

#### 4. The Development Methods

This study applied a system development method, the Waterfall Model of System Development Life Cycle Phases (Royce, 1970) in the development process. The five phases include System Analysis, System Design, System Construction, Test Modification, and System Assessment. The ePortfolio standards were reviewed, analysed, and summarized in previous section. They were then designed and constructed on the Microsoft SharePoint Server. For the system assessment which this paper will mainly focus, two questionnaire instruments were developed. One was for the appropriateness of the ePortfolio design, another was for the acceptance survey of the users.

##### 4.1 Samples

Expert consultations were applied in each stage of the development to secure a valid and reliable design. There were 32 graduate students who were also in-service technology education teachers with knowledge management and e-learning backgrounds, were asked to assess the designed portfolio.

## 4.2 Assessing instrument development

### For EPortfolio Functions

There were 26 items developed in the questionnaire for the ePortfolio design functions. Table 5 presents the construct of the questionnaire and the supported literature.

**Table 5:** Assessment Construct for the Designed EPortfolio Functions

Construct	Indicators	Items (from reference sources)
<b>A. System Environment</b> (Sources: Hwang, Huang, & Tseng, 2004; Shee & Wang, 2008)	A1. User system	<ul style="list-style-type: none"> <li>- The learner can learn how to operate the user interface quickly.</li> <li>- The interface is user-friendly.</li> <li>- The interface is operationally stable.</li> </ul>
	A2. System security	<ul style="list-style-type: none"> <li>- The system provides access-control functions.</li> <li>- The system protects personal data of the learners.</li> </ul>
<b>B. EPortfolio Module</b> (Sources: Wang, 2003; Liaw, Chen, & Huang, 2008)	B1. Module design	<ul style="list-style-type: none"> <li>- The e-learning system provides content that exactly fits your needs.</li> <li>- The e-learning system provides sufficient content.</li> <li>- The e-learning system provides useful content.</li> </ul>
	B2. Module functions	<ul style="list-style-type: none"> <li>- The knowledge gathering function is useful.</li> <li>- The knowledge analysis function is useful.</li> <li>- The knowledge construction function is useful.</li> </ul>
<b>C. Template Design</b> (Sources: Hwang, Huang, & Tseng, 2004; Shee & Wang, 2008; Wang, 2003; Mahdavi, Fazlollahtabar, Heidarzade, Mahdavi-Amiri, & Rooshan, 2008; Hsu, Yeh, & Yen, 2009)	C1. Webpage flow	<ul style="list-style-type: none"> <li>- The e-learning system enables you to learn the content you need.</li> <li>- The learner can always find a link to access relevant web pages.</li> <li>- The learner can always return to main menu.</li> </ul>
	C2. Template layout	<ul style="list-style-type: none"> <li>- There are some functions that confuse the learner.</li> <li>- The objects (text, images or icons) of each webpage locate in the suitable position.</li> <li>- The system provides an easy-to-use interface for the learner.</li> <li>- The texts can be clearly read.</li> </ul>
	C3. Learning community	<ul style="list-style-type: none"> <li>- The system is easy to discuss with other learners.</li> <li>- The system is easy to discuss with teachers.</li> <li>- The system is easy to access with shared data.</li> </ul>

To secure a better reliability of the instrument, the questionnaire was first administered for content validity of wording and appropriateness of the items to three experts in KM and e-learning. Cronbach's alpha coefficients were calculated for each of the groups of items and for the total of the scale on the research samples. Table 6 shows the Alpha coefficients of the principal components which were over 0.6 except Module Functions which was .585 near the acceptable margin. This could be explained that the functions in the module were designed on a comprehensive KM system which has more functions to learn with. However, the average answer rate of Module Functions was high with a mean over 4 and the total reliability was .912. This indicated most of the users agreed that the functions in the module are acceptable.

**Table 6:** Reliability and Validity of the Developed Questionnaire in Design Assessment

Principle components	No of Items	Cronbach's Alpha	Square Root of Cronbach's Alpha (as construct validity)
User System	4	.647	.80
System Security	3	.786	.88
Module Design	3	.611	.78
Module Functions	3	.585	.76
Webpage Flows	5	.821	.90
Template Layout	5	.785	.88
Learning Community	3	.775	.88
Total	26	.912	

A construct validity of the survey instrument was carried out by taking the squared root of reliability coefficient as it is proved that the maximum validity coefficient (the correlation of a group with other groups) equals the squared root of reliability coefficient (Salkind, 2006; Hunter & Schmidt, 2004). In addition, Weiner and Greene (2008) also mentioned in the research that 'a validity coefficient for a score or scale cannot exceed the square root of its reliability coefficient' (p. 55). The result of correlation matrix of the groups in factors showed that the validity coefficient was smaller than the square root of the reliability coefficient (Cronbach's Alpha) (comparing with the right two columns of Table 6). This shows that the validity of this instrument was significant for the study.

#### For Acceptance Survey

The acceptance survey applied the Technology Acceptance Model (Davis, Bagozzi, & Warshaw, 1989). The detailed questionnaire constructs are shown in Table 7.



**Table 7:** Assessment Construct for Acceptance of the Designed EPortfolio

Construct	Indicators	Items (from reference sources)
<b>D. Perceived ease of use</b> (Ngai et al., 2007; Pituch & Lee, 2006; Raaij & Schepers, 2008; Masrom, 2007; Agius, 2004)	PEOU1–PEOU5	<ul style="list-style-type: none"> <li>- Easy to find the information needed</li> <li>- The layout is clear and easily understood.</li> <li>- The interface is easy to use.</li> <li>- The interface is easy to understand.</li> </ul>
<b>E. Perceived usefulness</b> (Ngai et al., 2007; Pituch & Lee, 2006; Raaij & Schepers; Masrom, 2007)	PU1–PU3	<ul style="list-style-type: none"> <li>- Web-based learning enhances the effectiveness of my learning</li> <li>- Finding Web-based learning to be advantageous to my learning</li> <li>- Finding the Web-based learning system useful in my learning</li> </ul>
<b>F. Attitude toward using</b> (Ngai et al., 2007; Masrom, 2007)	ATU1–ATU3	<ul style="list-style-type: none"> <li>- Using Web-based learning is a good idea</li> <li>- Web-based learning system provides an attractive learning environment</li> <li>- I like using Web-based learning</li> </ul>
<b>G. Intention to use</b> (Ngai et al., 2007; Masrom, 2007)	IU1–IU5	<ul style="list-style-type: none"> <li>- Intend to increase the use of Web-based learning system in the future</li> <li>- Intend to use e-learning often</li> <li>- Intend to visit e-learning frequently for work</li> </ul>

In the acceptance survey, the Cronbach's alpha coefficients were calculated for each of the groups of items besides the total scale. The detailed reliabilities of the questionnaire are shown in Table 8. The table shows that the Alpha coefficients of the principal components were over 0.6 except Attitude toward Using which was .585. The result could be explained the same as the appropriateness of the former functional survey. However, the average answer rate of Attitude toward Using was also high with a mean over 4 and the total reliability was .911. This indicates most of the users agreed that their attitude toward using the e-learning portfolio template was positively acceptable.

**Table 8:** Reliability and Validity of the Developed Questionnaire in Acceptance Survey

Principle components	No of Items	Cronbach's Alpha	Square Root of Cronbach's Alpha (as construct validity)
Perceived Ease of Use	4	.756	.86
Perceived Usefulness	3	.752	.86
Attitude toward Using	3	.585	.76
Behavioural Intention to Use	5	.850	.92
Total	15	.911	

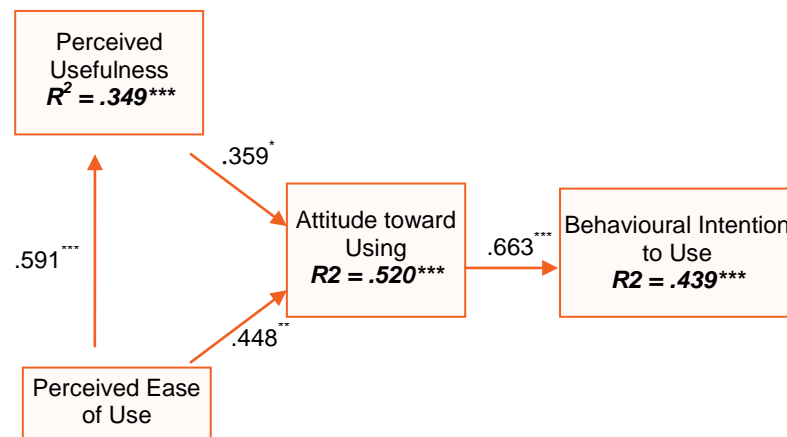
A construct validity of the acceptance survey instrument was carried out with the same method as the functional assessment. The result of correlation matrix of the groups in factors showed that the validity coefficient was smaller than the square root of the reliability coefficient (Cronbach's Alpha) (comparing with the right two columns of Table 8). This proved that the validity of this study was significant for the research.

## 5. Results

From the results of regression analyses, path analysis was further performed on variables which had significant effects on Behavioural Intention to Use. Table 9 displayed variables used in the regression analyses to achieve path coefficients for the model. There were three internal variables: (1) Perceived Ease of Use; (2) Perceived Usefulness and (3) Attitude Toward Using. Path analysis was done to further understand the effects including indirect and direct effects from the variables that caused on Behavioural Intention to Use. Figure 2 illustrated the relationship in path analysis model.

**Table 9:** Variables Used in Regression Analyses to Obtain Path Coefficients

Model	Dependent variables	Independent variables
Behavioural Intention of Use	(1) Perceived Usefulness	Perceived Ease of Use
	(2) Attitude Toward Using	Perceived Usefulness, Perceived Ease of Use
	(3) Behavioural Intention to Use	Perceived Usefulness, Attitude Toward Use



**Figure 2:** Relationship in Path Analysis Model

\*  $p < .05$ ; \*\*  $p < .01$ ; \*\*\*  $p < .001$

The direct and indirect effects of the dependent variables on subsequent dependent variables are calculated as follows.

(1) Effect of *Perceived Ease of Use* on *Behavioural Intention to Use*

Path 1: *Perceived Ease of Use*  $\rightarrow$  .488 *Attitude toward Using*  $\rightarrow$  .663 *Behavioural Intention to Use*  
 $= .488^{**} \times .663^{***} = .324$

Path 2: *Perceived Ease of Use*  $\rightarrow$  .591 *Perceived Usefulness*  $\rightarrow$  .359 *Attitude toward Using*  $\rightarrow$  .663 *Behavioural Intention to Use*  
 $= .591^{***} \times .359^{*} \times .663^{***} = .140$

Total indirect effect:  $= .324 + .140 = .464$

(2) Effect of *Perceived Usefulness* on *Behavioural Intention to Use*

Path: *Perceived Usefulness* → .359 *Attitude toward Using* → .663 *Behavioural Intention to Use*

$$= .359 \times .663^{***} = .238$$

Total indirect effect: = .238

(3) Effect of *Attitude toward Using* on *Behavioural Intention to Use*

Path: *Attitude toward Using* → .663 *Behavioural Intention to Use*

Total direct effect: = .663

The relationship between the three internal variables (*Perceived Ease of Use*, *Perceived Usefulness* and *Attitude toward Using*) and *Behavioural Intention to Use* were summarized in Table 10. The table shows that among the variables in TAM, *Perceived Usefulness* had less effect (.238) on *Behavioural Intention to Use* and *Perceived Ease of Use* had medium effect (.464), while the variables *Attitude toward Using* had high direct effect (.663) on *Behavioural Intention to Use*.

**Table 10:** Summary of Estimating Direct and Indirect Effect

	Relationship (Paths)	Direct Effect (1)	Indirect Effect (2)	Total Effect (1+2)
1	<i>PEU</i> → <i>IU</i>		.464	.464
2	<i>PU</i> → <i>IU</i>		.238	.238
3	<i>AU</i> → <i>IU</i>	.663		.663

Note: *PEU* = *Perceived Ease of Use*; *PU* = *Perceived Usefulness*; *AU* = *Attitude toward Using*;  
*IU* = *Behavioural Intention to Use*

## 6. Findings and Discussions

The results showed that the Microsoft Office SharePoint Server platform was very appropriate for ePortfolio learning as it could provide flexibility and potentiality for various types for ePortfolio functions in knowledge management, besides as an institutional KM portal. Detailed findings and discussions are described below.

### 6.1 Demographic Factors

The study presents that the users accepted the design of the e-learning portfolio. However, the users did not highly agree that the template was user-friendly. The functions did fit users' need in most parts. The design function sequence for learning layout was acceptable even that it needed more logically and vividly improved. Most of the users have KM or E-learning experiences and they have often applied them in teaching or learning. People whose major study is in educational technology are likely to accept the system rather than those whose major field is in human resource development or technology education. It verifies that users with more related

e-learning and knowledge management background, and those with a higher educational degree are more likely to accept the system.

### *6.2 Relationship among Factors in Functional Assessment*

Most of the relationships among the factors in the design assessment were positive. Module Function was found to have strongly positive relationship with Template Layout. However, they had a medium positive effect on Learning Community. This implies that assessment of usefulness and ease of use of the module functions does not affect much discussing and sharing ideas with learners or teachers on the platform. In this study, the module functions were useful and suitable for e-learning use. Therefore, the template layout was reasonably designed for students' use. On the other hand, Learning Community had relatively high positive relationships with Webpage Flow and Module Design. This means when the sequence of the webpage and design of the module are well-constructed, discussing and sharing ideas will be easier. The result showed that the Learning Community was reasonably good, so the module and webpage flow were designed in suitable positions. Furthermore, Module Design and Webpage Flow had a fairly strong influence on User System. In addition, Template Layout positively affected User System and Webpage Flow, which meant that the layout and interface of the system were well-designed, so the system is stable and learners can easily find a link to access, the module process is learning-effectively constructed. The Module Functions showed rather strong relationship with Module Design. The importance of design in module strongly affected useful functions in the module. And Module Functions also had a quite highly positive effect on Webpage Flow.

### *6.3 Relationship among Factors in Acceptance Survey*

The result shows that users' attitude toward using the e-learning portfolio template had the strongest effect on intention to use the ePortfolio. It was the biggest predictor for Behavioural Intention to Use and Perceived Usefulness was the smallest predictor for Attitude toward Using. The findings showed several implications. First, this study has good relationship between the belief constructs. It points out that ease of use of the system influences usefulness of the system, and both belief constructs are important predictors of the e-learning portfolio template. In order to increase the use of the system, the system should be perceived as both easy to use and useful. Second, users who perceive that the system is easy to use will intend to use in the future. Third, the importance of Perceived Ease of Use is further illustrated by its direct effect on Attitude toward Using.

## **7. Suggestions**

As mentioned before the purpose of this study was to develop an e-learning portfolio with SharePoint Server (SPS) system for students. Therefore, suggestions for promoting students to use the template and future research were proposed as follows.

### *7.1 Suggestions for Instructors*

The study showed that the e-learning portfolio on SPS was appropriate to use. And from the results the average of students' attitude and intention to use the system were strong (over 4 on a 1 to 5 rating). Instructors could use this system to promote students to knowledge management, problem solving, and collaborative learning

besides personal ePortfolio learning. Instructors could teach students how to organize their critical thinking. To enhance the effectiveness of applying the template, instructors could direct students how to use functions of the template in logical steps. Instructors should also focus on the way to teach students how they can acquire knowledge when they use this system. From the results, Attitude toward Using was found to have a strong direct effect on behavioural intention to use. This emphasized the importance of students' attitude to the designed portfolio. Therefore, instructors should make sure that all students know how to operate the system well. That is, the more students know the system, the more they want to use it in learning.

### 7.2 Suggestions for Administrators

The e-learning portfolio template was good for achieving knowledge management, brainstorming ideas and organizing knowledge. The university administrators such as deans of colleges, heads of academic departments, could apply this system for students' use in educational field and purpose because students could manage, organize their knowledge in logical ways, they could also collect and share knowledge. Moreover, the e-learning portfolio could enhance collaborative learning activities for knowledge management.

### 7.3 Suggestions for Further Study

As the finding shows, Perceived Usefulness has little indirect effect on Behavioural Intention to Use. That means there will be other factors affecting Behavioural Intention to use the e-learning portfolio. Future research efforts can be addressed in finding out other external factors, such as self-efficacy, students' characteristics, technology, pedagogy, computer competence. There may be relevant factors affecting the most intention to use the system.

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Dr Lin is active in academic research with granted projects and publications. He has served as various journal editor and paper reviewer. He was an exchange professor to the University of North Dakota, USA, and a visiting academic at Massey University, New Zealand. He has recently involved in offshore EMBA class teaching at Ho Chi Minh City University of Industry and Foreign Trade University in Vietnam.

## Seoul Accord iPortfolio template for computing students

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### Abstract

The Seoul Accord (<http://www.seoulaccord.com/>) has a primary goal of improving computing education worldwide by establishing desired levels for standard attributes that computing graduates should achieve. For graduates to achieve these levels, it may mean that their academic qualifications should be augmented by attributes comprising lifelong learning skills, the ability to solve problems, to work both independently and in a team, to communicate effectively, and to self-direct one's learning and professional development needs.

*Portfolios are seen as tools to increase students' self-awareness, to foster students' ability to learn independently and to encourage students to reflect on their own performance* (Buckley et al., 2009). Portfolios typically contain examples of a student's work so as to demonstrate that they have met the desired goals. For computing students, ePortfolios are inherently appropriate. The target audience for any ePortfolio 'demonstration' may be self, a potential employer, or even for academic assessment.

*The electronic portfolio requires the student to think critically about what to include, why include it and how to draw adequate attention to included items* (Ury, 2001). Selection of 'best work' from a student's career development journey is vital for the best demonstration of their skills and abilities. In the selection process, a student gets an opportunity for reflection and self-assessment, and to realize exactly what their strengths and weaknesses are in a particular domain.

However, it is not easy even for an experienced domain expert to know how to choose and then 'tag' computing examples so as to be associated with the correct sections of the Seoul Accord specification. Inexperienced undergraduates are often confused about what examples should go where to demonstrate achievement at the required level. Descriptive templates, populated with tagged examples, created by a domain expert, can be used by students as a basis for creating their own ePortfolio.

This Case Study describes the design, and implementation of a Seoul Accord ePortfolio populated template. Through analysis of the Accord's 'Computing Professional' specification, a template was developed, and populated with typical reflective undergraduate computing code, essays, manuals, etc that would serve as best practice examples on how to build an ePortfolio compliant

with the Accord standards. The examples were also tagged within the ePortfolio system so as to be usable for different target audiences and to be applicable to other goals, such as meeting University Graduate Attributes requirements. The template will be used and evaluated in second semester 2010.

## Biography

### Andrew Marriott

When the World Wide Web first started, Andrew Marriott initiated several projects to exploit its functionality. At that stage, the Computer Graphics course that he put onto the WWW was one of only 10 online courses in the world! Things have since changed. He has continued to work in areas where IT can help students learn, notably:

- His PhD was concerned with a software based Mentoring system. This was designed and developed to be an intelligent learning assistant to help students in their university studies. That is, it used several educational paradigms to help students, typically in their assignments. Students could ask (by typing) natural language questions and it would use these paradigms and the information from its Knowledge Base plus data-mined online Web sites to answer.
- He also designed and developed the **imLearning** — Integrated Management of Learning system, which has been in use for the last four years, and has been of benefit to his students in their learning, and has also significantly reduced the administritivia of teaching, and lets him spend his time more productively on teaching.
- His latest foray is in the area of ePortfolios where he and his colleagues designed and implemented a Seoul Accord ePortfolio template. Through analysis of the Accord's 'Computing Professional' specification, a template was developed, and populated with typical reflective undergraduate computing code, essays, manuals, etc that would serve as best practice examples on how to build an ePortfolio compliant with the Accord standards. The template was trialled and evaluated in second semester 2010.

## ePortfolio implementation case studies: challenges and opportunities

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### Abstract

EPortfolios provide a web-based space where students in demonstrate their development of expertise in a wide range of skills and knowledge, whether in discipline knowledge or graduate capabilities (JISC, 2007).

This paper reports on the results of a pilot implementation of the Mahara ePortfolio tool in an Australian university, involving two different curriculum contexts. Students in the two units were surveyed on their perspectives about the usability of the ePortfolio tool, the support provided and its effectiveness for their learning.

The results suggest that, like all successful curriculum innovations, ePortfolios need to be integrated into the learning and teaching process. There are also insights into the pragmatic nature of many students in adopting new technologies and their priorities in selecting and using functions.

**Keywords:** *ePortfolio, technology, student capabilities, work-integrated learning, learning and teaching*

### Background

EPortfolios provide a web-based space where students can demonstrate their development of expertise in a wide range of skills and knowledge, whether in discipline knowledge or graduate capabilities (JISC, 2007). For learners, portfolios can enable learners to present evidence of their learning for diverse uses, whether to supervisors for feedback, markers for assessment or prospective employers as part of their transition out of university (McAllister, Hallam, & Harper, 2008; Yorke & Croot, 2004).

In the simplest form, these learning portfolios can be collections of documents, including the artefacts of learning, drafts, and synopses however evidence of self-reflection as underpinning learning (Woutersa, Paas, & van Merriënboerb, 2009) is an important distinction.

### XXX University Context

There are several recent drivers for the investigation of e-learning portfolios at XXX University:

- The University's development of graduate capabilities such as *critical thinking*, *problem solving*, *creativity* and *effective communication*, to be embedded in each program as part of the Curriculum Renewal Program. EPortfolios provide opportunities to capture the development of these capabilities, which have typically been considered as difficult to assess (Race, 2001);
- The University's Sustainability policy encouraging lifelong learning, with particular reference to *work-integrated learning*. Learning portfolios can enable students to demonstrate the development of expertise over time, useful in transition to work or further study.
- The requirement that all students undertake a *Participation* unit, for example work placements, internships, practicums. EPortfolios can provide a centralised space for students to collaborate with peers from the workplace and the University.

In order to inform the University's decisions about whether to invest in a centralized ePortfolio tool for use across campus, a small-scale trial was conducted in two units:

- a) A Higher Education Program post-graduate unit, Designing ICT-based Courses and Learning Materials, where the University's LMS is used to host the unit content and Mahara is provided as an option for storing and submitting assessment tasks and
- b) The University's International Internship Program offering internship placements to undergraduate and postgraduate international students. The Mahara ePortfolio tool was used in place of the Blackboard learning management system to support assessment of the internship online.

Convenors of both units were keen to explore the potential of an ePortfolio tool to enable students to store and share evidence of their learning, encourage reflection on the learning journey and to streamline assessment and feedback processes.

While several ePortfolio systems including commercial systems such as PebblePad and in-house developed systems such as the QUT Student ePortfolio (McCowan, Harper, & Hauville, 2005) are available, Mahara ePortfolio tool was chosen, largely because of its open source nature and its functional ability to support the learning outcomes of the units involved.

## Methodology

A case study approach was used to investigate teacher and student perceptions in relation to the Mahara ePortfolio tool. The Communications, ICT and Organisation (CICTO) framework (Gosper, Woo, Muir, Dudley, & Nakazawa, 2007) was used as a basis for the development of a survey to gather students' feedback at the completion of the two units at the University. The survey included questions relating to the ePortfolio's usability, technical support, and overall effectiveness for learning. The online survey link was sent to all 112 students including 30 students in the Higher Education post-graduate unit and 82 students in the Internship Program.

The unit convenors and other teaching staff were invited to capture their reflections during the trial, however due to space limitations these are not addressed in this paper.

## Results

Of the 112 students invited, 82 participated in the survey (73%); 20 of the 30 enrolled in the Higher Education program and 62 of the 82 enrolled in the Internships program. This section presents the results of the survey.

### Accessing the Mahara ePortfolio Tool

The first question in the online survey asked students how successful they were in accessing the Mahara ePortfolio tool, as shown in Table 1.

**Table 1:** Statistics for Accessing the Mahara ePortfolio Tool

1. Please indicate how successful you were in accessing the Mahara ePortfolio tool		
Answer Options	Response Percent	Response Count
Very successful — I managed to use the tool for the purposes of the unit	37.5%	30
Quite successful — I managed to get in and do some of the tasks	51.3%	41
Not very successful — I managed to log in to Mahara but could not submit the tasks	10.0%	8
Very unsuccessful — I tried but didn't manage to log in at all	2.2%	2
Comment		16*
<i>answered question</i>		80
<i>skipped question</i>		2

Although **88.8%** of all students were very successful or quite successful in accessing the Mahara ePortfolio tool, 12.2% of students indicated they were *not very successful or very unsuccessful*. The 16 comments left by students largely centred on problematic aspects, for example:

- There were too many options and buttons on the websites and it was too difficult and complicated in posting up their views and submitting assignments.
- Students were not given clear instructions and guides to be familiar with the Mahara ePortfolio tool. They indicated they needed to spend a long time to figure things out and learn from trial and error.
- Students met some troubles with copying, pasting and submitting, as well as accessing to demo video.



### The Capability of the Mahara ePortfolio Tool

The second question was designed to investigate students' views related to the capability of the Mahara ePortfolio tool. Results are shown in Table 2 below.

**Table 2:** Students' Views on the Capability of the Mahara ePortfolio Tool

2. Please indicate your agreement with the following statements about the ePortfolio tool								
Answer Options	SA	A	N	D	SD	N/A	Rating Average	Response Count
was helpful in collating my work for submission as part of the unit's assessment	13.4% (9)	37.3% (25)	23.9% (16)	13.4% (9)	10.4% (7)	1.5% (1)	2.75	67
helped me reflect on what I have learned during the unit	8.8% (6)	39.7% (27)	20.6% (14)	17.6% (12)	11.8% (8)	1.5% (1)	2.88	68
helped me integrate and make connections between the things I have learned	9.9% (7)	21.1% (15)	23.9% (17)	23.9% (17)	16.9% (12)	4.2% (3)	3.30	71
<i>answered question</i>								74
<i>skipped question</i>								8

Table 2 indicates that over half (**50.7%**) of respondents agreed or strongly agreed that the ePortfolio was helpful in collating their work for submission as part of the unit's assessment. Nearly half (**48.5%**) of respondents agreed or strongly agreed that the ePortfolio tool helped them reflect on what they have learned during the unit. Only 9.9% of respondents agreed or strongly agreed that the ePortfolio tool helped them integrate and make connections between the things they have learned (whether in this unit and other contexts).

### The Usability of the Mahara ePortfolio Tool

The third question examined the usability of the Mahara ePortfolio tool. Table 3 below presents the results.

**Table 3:** Usability of the Mahara ePortfolio Tool

3. These questions are about the usability of the tool							
Answer Options	SA	A	N	D	SD	Rating Average	Response Count
The ePortfolio was generally easy to use	5.7% (4)	32.9% (23)	17.1% (12)	24.3% (17)	20.0% (14)	3.20	70
I had sufficient support to use the ePortfolio tool	7.1% (5)	47.1% (33)	28.6% (20)	11.4% (8)	5.7% (4)	2.61	70
Technical issues limited my use of the ePortfolio tool	5.7% (4)	30.0% (21)	21.4% (15)	32.9% (23)	10.0% (7)	3.11	70
Other (please specify)							5
<i>answered question</i>							73
<i>skipped question</i>							9

Of the respondents, **38.6%** agreed or strongly agreed that the ePortfolio was generally easy to use. Over half (**54.2%**) of respondents agreed or strongly agreed that they had sufficient support to use the ePortfolio tool. Over 1/3 (35.7%) of respondents agreed or strongly agreed that technical issues limited their use of the ePortfolio tool.

Some comments from students explained these difficulties, for example:

*The links were not clear as to where I needed to go — I had to keep flicking through to figure out where I needed to get to.*

#### *The Technical Supports in Learning How to Use the Mahara ePortfolio Tool*

The fourth question in the survey aimed to find out which types of technical support students utilised in learning how to use the Mahara ePortfolio tool. Results are shown in Table 4.

**Table 4:** Support in Learning How to Use the Mahara ePortfolio Tool

4. Which types of support did you utilise in learning how to use the tool?		
Answer Options	Response Percent	Response Count
Online instructions about the site, such as the user manual	64.3%	45
Online discussions with other users	11.4%	8
Individual guidance (email or phone) from the unit convenor	35.7%	25
Individual guidance (email or phone) from other students	14.3%	10
No support used — I just worked it out for myself	18.6%	13
<i>answered question</i>		70
<i>skipped question</i>		12

Table 4 shows that most students (**64.3%**) utilised the online instructions and half (50%) of students also used the individual guidance from the unit convenor (35.7%) or other students (14.3%) to learn the tool. Only 11.4% of students chose online discussions with other users as the approach to learn the ePortfolio tool. Some (18.6%) students did not utilise any support — they could work it out for themselves.

#### *Students' Evaluation on the Technical Supports*

Followed by the previous question, the fifth question examined if the technical supports provided to students were really helpful.

**Table 5:** Students' Evaluation on the Technical Supports

5. If you did use these supports, do you agree that they were helpful?								
Answer Options	SA	A	N	D	SD	N/A	Rating Average	Response Count
Online instructions on the site	10.4% (7)	44.8% (30)	14.9% (10)	10.4% (7)	4.5% (3)	14.9% (10)	2.99	67
Online discussions with other users	3.6% (2)	17.9% (10)	28.6% (16)	10.7% (6)	1.8% (1)	37.5% (21)	4.02	56
Individual guidance from the unit convenor	13.3% (8)	43.3% (26)	16.7% (10)	3.3% (2)	0.0% (0)	23.3% (14)	3.03	60
Individual guidance from peers such as other students	5.3% (3)	24.6% (14)	26.3% (15)	5.3% (3)	1.8% (1)	36.8% (21)	3.84	57
answered question								69
skipped question								13

Table 5 indicates that over half (**55.2%**) of students who utilised online instructions on the site agreed or strongly agreed that they were helpful. Similarly, more than half (**56.6%**) of students agreed or strongly agreed that individual guidance from the unit convenor was helpful.

#### *The Overall Impact of the Mahara ePortfolio Tool*

The sixth question was designed to investigate the overall impact of the Mahara ePortfolio, as shown in Table 6 below.

**Table 6:** Overall Impact of the Mahara ePortfolio Tool

6. Overall impact of the technology								
Answer Options	SA	A	N	D	SD	N/A	Rating Average	Response Count
Overall, the ePortfolio tool was helpful for my learning	6.9% (5)	33.3% (24)	19.4% (14)	22.2% (16)	16.7% (12)	1.4% (1)	3.13	72
I consider it a useful experience learning how to use the ePortfolio tool	8.7% (6)	29.0% (20)	27.5% (19)	20.3% (14)	13.0% (9)	1.4% (1)	3.04	69
I think the ePortfolio tool will have other applications	4.7% (3)	37.5% (24)	29.7% (19)	17.2% (11)	7.8% (5)	3.1% (2)	2.95	64
answered question								72
skipped question								10

Of the respondents, **40.2%** of respondents agreed or strongly agreed that overall, the ePortfolio tool was helpful for their learning, with over 1/3 (**38.9%**) disagreeing or strongly disagreeing with this statement. Over one third (**37.7%**) of respondents agreed or strongly agreed that it a useful experience learning how to use the ePortfolio tool, while 27.5% of respondents chose 'Neutral'. Of the respondents,

42.2% agreed or strongly agreed that the ePortfolio tool would have other applications, although 29.7% of them chose 'Neutral'.

### *Students' Suggestions on Better Use of Mahara ePortfolio Tool*

The seventh question invited students for suggestions on how to improve how Mahara ePortfolio is used in the unit for next time. The 43 comments and suggestions were categorized as:

- a) Improving usability and instructions. For example, *Make the functions easier to learn ... it was a bit complicated...*

*Or Better explanation how to use it; how to create blogs, and so on ... it was all very confusing ... it took me a long time to understand how it works...*

There were comments indicating student satisfaction with the usability of the tool, such as *I liked having the ePortfolio because it meant all the information I needed for this course could be found in a very simple fashion online.*

- b) Simplifying usage. For example, *Using Blackboard and Mahara seems overload — perhaps use more of the Mahara blogging facilities...*
- c) Streamlining tasks. For example, *I think that the tasks we have done on the ePortfolio have been interesting, but they have been too big.*
- d) Comments relating to the benefit of communication or self-reflection. For example, *The ePortfolio forum function really provides students a platform to share work and personal experience. Participants of this program are culturally diverse, it is very important to understand how people live, work and communicate in other cultures, simply because we are living in a globalised world.*

Example two: *Allow more communication options and sharing of files and information between students.*

Some student comments indicate a high level of engagement with the evaluation of the tool. For example, they provided suggestions on how to improve the usability of the tool not just comments on what was wrong. For example: *Rearrange the blogs so when you post anytime it posts from the latest post down instead of in alphabetical order...*

### *The Performance and Features of the Mahara ePortfolio Tool*

Question Eight aimed to figure out students' views related to the performance and features of the Mahara ePortfolio tool, as shown in Table 7 below.

**Table 7:** Students' Views on the Performance and Features of the Mahara ePortfolio tool

8. The following are considerations for the University in choosing an ePortfolio tool for wider use. Please indicate your agreement about whether it is very important that the tool:							
Answer Options	SA	A	N	D	SD	Rating Average	Response Count
is simple and user-friendly to use	26.8% (19)	18.3% (13)	23.9% (17)	21.1% (15)	9.9% (7)	2.69	71
works well with the other Uni online learning tools	22.9% (6)	25.7% (18)	27.1% (19)	21.4% (15)	2.9% (2)	2.56	70
can be used after I leave the Uni	17.4% (12)	23.3% (16)	29.0% (20)	24.6% (17)	5.8% (4)	2.78	69
lets me upload a variety of file formats	25.7% (18)	31.4% (22)	34.4% (24)	8.6% (6)	0.0% (0)	2.26	70
enables me to share my learning with my teachers	21.4% (15)	57.1% (40)	15.7% (11)	5.7% (4)	0.0% (0)	2.06	70
enables me to share my learning with other students	19.7% (14)	57.7% (41)	15.5% (11)	5.6% (4)	1.4% (1)	2.11	71
enables me to share my learning with others outside Uni, such as prospective employers	10.1% (7)	26.1% (18)	34.8% (24)	24.6% (17)	4.3% (3)	2.87	69
<i>answered question</i>							71
<i>skipped question</i>							11

Over three quarters (**78.5%**) of respondents agreed or strongly agree that the ePortfolio tool should enable them to share their learning with their teachers and more than three quarters (**77.4%**) of respondents agreed or strongly agreed that sharing their learning with other students was a high priority. Allowing them to upload a variety of files formats was important to more than half (**57.1%**) of respondents. Simplicity and ease of use was less important to most students, with less than half (45.1%) of respondents agreed or strongly agreed that this was a main consideration. Only **36.2%** agreed or strongly agreed that being able to share their learning with others outside Uni was important.

## Discussion

While this study involved two different teaching contexts, both unit convenors were keen to gather student feedback on the potential of Mahara ePortfolio tool to support student capture and sharing of their learning journeys and encourage reflection, while also streamlining their own administrative and marking processes.

According to the survey results, most students were satisfied that they could access the ePortfolio, with no specific technical issues. Most agreed that sufficient support was provided them to use this tool. The majority of students also deemed that the ePortfolio was helpful in collating their work for submission as part of the unit's assessment and in reflecting on they have learned during the unit. Some identified that it helped them become critical thinkers and aided in the development of their writing and multimedia communication skills. Some students commented on the benefits of the ePortfolio in supporting reflection on their experience, keeping track of their work and preparing for the assessment tasks, for example:

*I can see the benefits of e-portfolio in self reflection... to review what I learnt during one day working experience, what I can improve myself in order to perform better, how the organisation could be improved if some actions could be taken, and how to manage my time more efficiently. The blog function really gives me ability to sit down and have a clear and logical self reflection process.*

While some respondents saw this potential, most students disagreed that the tool was helpful in this regard. In the next stage of the trial, interviews will be conducted to explore this issue in more detail.

When the results were filtered to compare the perspectives of the two groups of students, those in the Internship program were more likely to agree that the ePortfolio tool was helpful and easy to use. Many of the Internship students liked how the ePortfolio contained everything they needed for the unit as well as a place to submit assignments in one place. In contrast, many of the Higher Education program respondents found that using two learning platforms, the University's LMS and Mahara, was confusing and were dissatisfied with the perceived duplication. This issue will be explored in more detail in the next phase.

Student feedback again reinforced the value of communication and interaction, as students in the Internship program in particular enjoyed being able to share their internship experience with others from diverse cultural backgrounds. For example:

*The e-portfolio forum function really provides students a platform to share work and personal experience. Participants of this program are culturally diverse, it is very important to understand how people live, work and communicate in other cultures, simply because we are living in a globalised world.*

While many saw communication as important, an unexpected result from many students was their resistance to the social networking aspect of the ePortfolio. The ePortfolio was deliberately designed to incorporate the features of a social networking tool similar to Facebook with a personal profile page, a wall, making 'friends' and an online forum. Staff expected that students would enjoy the Facebook style of Mahara and be able to relate to building a profile and interacting with each other in an online environment. There was a small portion of students that commented they liked the ePortfolio because it was 'a little like Facebook', however, this opinion was overshadowed by those who were unconvinced they needed another social media outlet. Many resisted the addition of another medium of online social networking and some suggested that opportunities for face to face meetings be offered to enhance interaction among peers or interns. For example:

*I am of the opinion that nowadays there are too many online social networks and we don't need any more. Just because we are the Facebook generation does not mean that we need a Facebook for every part of our lives.*

Another feature the unit convenors were keen to explore was the potential for the ePortfolio to be used by students to share evidence of their learning digitally, for a larger audience including potential employers. This was not rated highly by many students and most were more concerned with its use in sharing their work with their teachers and peers. There were, however, some respondents who recognised the



benefits of the tool in building their confidence and ability to begin applying for work when they graduate. For example:

*E-portfolio provides several interesting job hunting skills and tips for us to use.*

Although all the participating students had prior experience using online learning tools such as the University's LMS, there were some who found it difficult to use the system. This suggests that particular attention needs to be paid to students who need to spend time to learn how to use the system, both in terms of streamlining and improving the support provided to them, as well as demonstrating to them from the outset how it will be an initial investment that will save them far greater time in the future. Those students who succeeded in using Mahara and learning to become proficient users of the ePortfolio were more likely to agree that it was useful for their learning. Many of these students were also able to make constructive suggestions on how to improve the use of the tool.

## Conclusion

The results of this pilot suggest that, while ePortfolios may have many useful features, students need encouragement and support to appreciate the potential for their learning. Like all successful curriculum innovations, ePortfolios need to be considered as one of the tools to be integrated into the curriculum and embedded into the learning and teaching process. The results highlight the pragmatic nature of many students in adopting new technologies; most see themselves as time poor and need valid reasons to explore new tools.

While it is unclear whether an ePortfolio will be rolled out across the wider XXX University campus, some key themes have emerged from the study. These include the need for:

1. the ePortfolio to be integrated into the whole curriculum, rather than treated as an optional extra. Given the time poor nature of many students, they are unlikely to engage with an additional system and would prefer to have all the materials contained in one place;
2. guidance and support for students in a) recognizing the affordances of the ePortfolio tool and understanding how to use the tools. A user manual was centrally developed and shared amongst the unit convenors participating in the study. This was then customised for each unit context and will be further developed in the next phase;
3. Scaffolding for students in self-reflection. Although their potential in encouraging reflection is seen as a key feature of ePortfolios, students will not automatically take advantage of this affordance without guidance from learning and/ or assessment tasks.
4. A supportive team to share experiences during the pilot. This enabled a community approach to solving problems and aided the reflections of the unit convenors and other teaching participants.

The next phases of the study will include amendments made for the second semester implementation as a result of this feedback and exploration of these themes in more contexts. A set of guidelines for good practice in integrating ePortfolios into the whole curriculum will also be developed.

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## Biography

### Amanda Parker

Amanda Parker is Internship Program Coordinator for Macquarie International, where she arranges internship opportunities in a range of work-based settings for Macquarie University's international students. Committed to a scholarly approach to teaching, Amanda is currently completing a Masters in Higher Education and has been evaluating the use of technologies in her programs with students.

## Implementing ePortfolios — successes and sustainability

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### Abstract

#### Nursing and ePortfolios

With the introduction of National Registration in July 2010, all nurses will be required to keep a professional portfolio. The Nursing and Midwifery board has stated that portfolios can be electronic or hard copy, however no guidelines have been issued about the maintenance of an ePortfolio.

There are approximately 317, 618 nurses in Australia (Nursing and Midwifery Labour Force, 2007).

There has been much written about ePortfolios in nursing, however Australia is lagging behind in its uptake and encouragement of using portfolios in practice.

This presentation will look at some of the unique challenges that nurses face when keeping an ePortfolio such as:

- Challenges: Getting over the confidentiality hump...difficult but not impossible.
- Getting innovative and techno-savvy.
- Catering to the masses.
- Motivation: dealing with un-motivated.
- The 'red tape': bureaucracy and paranoia experience.

Why are ePortfolios important for nurses?

- Templates can be set up within an ePortfolio, so competencies can be hyperlinked to reflection.
- 5% of portfolios will be audited — can be sent at the click of a button rather than mailing a folder (expensive and may get lost in the mail!).
- Eliminate the need for bulky folders.

This presentation will highlight the mission of one nurse to introduce ePortfolios to the Emergency Department and if it was a success or failure. Recommendations will be made that may assist the ePortfolio community in understanding and developing strategies to help the everyday nurse embrace ePortfolios as 'the way of the future' (Leeson & Williams, 2009).

## Biography

### Jo-Anne McShane

Jo-Anne works at the Emergency Department at the Gold Coast Hospital and has been a nurse for 13yrs. Passionate about nursing excellence, Jo-Anne has been teaching about portfolios and is writing her Master's thesis on 'developing a workshop to educate nurses about portfolios'.

Jo-Anne's work place is already using the internet to store continuing professional development details, however she believes there is room to improve by creating a personalised ePortfolio account within the system.

## ePortfolios for supporting successful learner outcomes

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e-Works

### Abstract

This paper discusses the outcomes of the Australian Flexible Learning Framework's 2009 EPortfolio Implementation Trials (EIT), which investigated the way ePortfolios in vocational education and training (VET) can support learners successfully gain a formal qualification.

The trials aimed to help learners from various industry areas present information of their existing workplace skills either through RPL (recognition of prior learning) or through on the job assessment. The trials investigated the use of digital devices such as mobile phones, video recorders and point of view devices to generate workplace evidence.

These trials demonstrated that ePortfolios can be utilised for these purposes but require a number of key factors to be in place before ePortfolios can be more widely adopted. This paper details what these key factors are and how the EITs are continuing in 2010 as part of the strategy to achieve the Framework's VET EPortfolio Roadmap.

**Keywords:** *learner pathways, transitions, portability, recognition of prior learning, personalised learning, government initiatives, mobile devices*

### Introduction

The Australian Government has set the vocational education and training (VET) sector ambitious targets to increase the number of working aged Australians with a formal qualification. In order to achieve these targets, existing barriers to gaining a qualification, such as inefficient RPL (recognition of prior learning) processes and ineffective on the job assessment, will need to be overcome.

The Australian Flexible Learning Framework (Framework), the national training system's e-learning strategy, have identified that ePortfolios can support successful learning outcomes by providing learners with the skills and mechanisms to manage their lifelong learning records (Curyer, Leeson, Mason, & Williams, 2007). In 2009, the Framework provided three VET training organisations with small funding grants to trial the use of ePortfolios with their learners. These trials investigated how ePortfolios can be utilised to support learners gain a qualification, with a particular focus on skills shortage areas and/or fast tracking apprenticeships/traineeships.

This paper discusses the background, methodology and key findings of these action based research trials. These trials highlight how ePortfolios can enable learners to

better manage their learning while providing evidence for RPL and workplace assessment.

## Background

In 2007, the Framework, commissioned an environmental scan into the use of ePortfolio systems in the VET sector. This investigation identified that ePortfolios provide an effective way of supporting learner move more easily between training, other forms of learning and employment (Curyer et al., 2007).

To fully realise the potential of ePortfolios in the VET sector, the Framework decided that a cohesive national approach to gaining agreement on technical standards, policies and business rules would better enable the use of lifelong ePortfolio systems. As a result, the E-portfolios — Managing Learner Information business activity (E-portfolios, 2008) was incorporated into the Framework's 2008–2011 Business Strategy (Australian Flexible Learning Framework, 2007). To provide the necessary guidance for this national project, the VET EPortfolio Roadmap (Roadmap) (Australian Flexible Learning Framework, 2009a) was produced.

The Roadmap, a national strategic plan designed to support the diverse requirements for ePortfolios in VET, contains nine national goals and three key outputs as outlined in figure 1 below:



**Figure1:** The VET EPortfolio Roadmap — Nine National Goals and Key Outputs

One of the implementation strategies contained in the Roadmap identified that pilot projects within the VET sector should be encouraged to develop an understanding of the technical and policy requirements for the implementation of an ePortfolio system to support learner transition (National Goal: Transitions, Australian Flexible Learning Framework, 2009a, p. 13). In 2009, these pilot trials commenced with



seeding funding being provided through a competitive tender process to enable three VET training organisations, and are now known as the 'E-portfolios Implementation Trials' (EIT) (Australian Flexible Learning Framework, 2009b).

The 2009 EITs aimed to identify the contributing factors and resources required to support the use of an ePortfolio system in the verification of an individual's current skills which would enable them to quickly and effectively gain a qualification.

This funding provided three VET training organisations with an opportunity to implement an ePortfolio system to enable learners to generate, manage and validate their learning. Preference was given to tender applications which focussed on one or more of the following areas:

- Investigating the potential of an assessor or 'group' ePortfolio which integrated evidence validation and results recording to support quality assurance requirements; and/or
- Examining the use of an ePortfolio system to manage the generation of 'live' workplace or work-ready evidence i.e. using audio recordings, video recordings or point of view devices (EDUPOV, 2010) to capture the skills of an individual whilst they carry out their everyday workplace tasks e.g. an apprentice electrician completing some wiring

These trials aimed to build upon previous research undertaken by the Framework for the *E-portfolios for RPL Assessment* report (Australian Flexible Learning Framework, 2009c).

## Methodology

Applicants for the 2009 EIT funding were assessed by an independent selection panel against a range of published selection criteria. Applicants were required to articulate a real life problem effecting their training organisation which they believed could be solved through the use of an ePortfolio system.

Successful project applications were then used as the basis for each individual trial's Project Management Plan. Each successful trial team participated in an online induction with EPortfolios Business Manager to provide the necessary information about the trial requirements and the EPortfolios business activity.

Trial teams were then left to manage the projects at a local level. They were encouraged to undertake pre- and post-trial surveys of teaching staff and learners to evaluate the learning outcomes which occurred during the trial, especially in terms of digital literacy skills. They were also encouraged to use an action based research methodology of *plan, act, observe and reflect*, using either a group wiki/blog or their own individual ePortfolios to record this process. Trial teams were encouraged to collect anecdotal evidence along the way from their learners and teaching staff for the reporting process. Trial participants were also encouraged to share any resources which had been developed during the trial for dissemination via the Framework's E-portfolios Resource Bank (Australian Flexible Learning Framework, 2010).

In reporting on the trial outcomes, teams were specifically asked to identify any foreseeable requirements for future technical standards, policies and/or business rule which would enable future ePortfolio systems to better support the wider adoption of ePortfolio systems in the VET sector.

Internal communication and dissemination of the project were managed by the trial teams, with wider promotional activities managed by the Framework.

The VET training organisations involved in the 2009 EITs were:

- **Coonara Community House, Victoria** — working with Childcare workers seeking RPL for the Diploma of Children Services
- **Fire Protection Association Australia, Victoria** — working with Fire Service Technicians seeking on the job assessment
- **TAFE NSW, Sydney Institute, New South Wales** — working with apprentice and experienced hairdressers seeking workplace and RPL assessment for the Certificate III/IV in Hairdressing

Two of the trial teams used a Mahara ePortfolio system (Coonara & TAFE NSW) and the other team used the social networking tool, Ning (Fire Protection Association). Participating learners were all existing workers looking to be assessed either on the job or by recognition of existing skills through the RPL (recognition of prior learning) process.

Information and the final reports of these trials can be found at:  
<http://www.flexiblelearning.net.au/content/e-portfolios-funding>

### Key Themes and Findings to ensure the successful implementation of an ePortfolio system from the 2009 E-portfolios Implementation Trials

The following points were highlighted by the teams as being necessary requirements for the successful implementation of the ePortfolio system for RPL or on the job assessment were:

- providing an induction as well as on-going 'just-in-time' support while people learned how to use the ePortfolio system and any associated technologies (i.e. point of view glasses, uploading files/video, etc)
- connecting the use of the ePortfolio to what the learners were doing in their training/workplace, and not as just an 'add-on' or 'extra work' for the learners to undertake on their own accord
- the learner must understand 'what's in it for them' when using the ePortfolio. The learner needs to see the intrinsic value in using an ePortfolio beyond the assessment process, such as a future CV/Resume; social networking with colleagues; used in other parts of the training; supporting workplace performance management etc. The younger 'Facebook' generation are not automatically engaged in creating an ePortfolio just because technology or the internet is involved.
- in less structured ePortfolio system such as Mahara, once the navigational system is understood, the difficulty of use comes down to how to best 'layout' or 'present' work/evidence for an assessor and/or a variety of audiences. Templates or exemplars, especially while learning how to use the ePortfolio system, can help provide the structure to presenting work/evidence for both the learner and the trainer/assessor.

- the maturity of the learner may require different kinds of support i.e. for younger learners (< 25 years old) organisational support is often required over ICT support, whilst older learners (>40 years old) may require support to learn how to use the technology (ICT support), but will have the skills to organise or present their work/evidence.
- there is confusion amongst VET teachers/trainers/assessors about what is acceptable evidence in a digital environment like an ePortfolio system, especially in the RPL process. Research into the use of e-Assessment has been undertaken by the Australian Flexible Learning Framework's Benchmarking and Research business activity — <http://www.flexiblelearning.net.au/content/research>.
- using video is a great way of capturing workplace and practical evidence, however, it requires a lot of storage space, and learners need a lot of support to understand how to produce suitable video evidence, together with managing their files (file management), compressing large files and/or editing video.

### The future of the E-portfolios Implementation Trials

In 2010, three different VET training organisations have been funded to undertake further E-portfolios Implementation Trials, this time with a focus on using an ePortfolio to help learners present their information for either:

- transitioning from formal learning to the workplace
- receiving recognition for existing skills and/or credit transfer for prior learning, or
- gaining the appropriate learning and support mechanisms to ensure course completions.

Learners involved in the 2010 trials include disengaged 'at risk', learners doing a Certificate II in Retail, trainee Lab Technicians undertaking a Certificate IV, and Diploma of Nursing students.

At the time of writing this paper (August, 2010), these three trials had commenced their action based research trials and more information about these trials can be found at: <http://www.flexiblelearning.net.au/content/e-portfolios-funding>

### Conclusions

There is a growing need to improve the skill levels of individual Australians to improve the productivity of the Australian workforce and economy. The Australian Government is looking to the VET sector to meet these key objectives by increasing the number of Australians with a formal qualification. In order to achieve these goals, existing barriers for learners to gain their qualification quickly will need to be overcome, including inefficient RPL processes and ineffective learner support systems for on the job assessment.

The Australian Flexible Learning Framework is taking a national approach to support learners gain the qualifications they require through the use of a lifelong ePortfolio. The Framework's E-portfolios Implementation Trials (EIT) are providing VET training organisations with seed funding to implement an ePortfolio system to investigate how learners can be better supported to gain their qualifications.

The outcomes of the 2009 EITs provide some good evidence of what is required to support learners use an ePortfolio for gaining formal training and this work will be built upon during 2010 with different three training organisations participating in EITs.

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## Biography

### Allison Miller

Allison Miller is the Business Manager for the EPortfolios business activity for the Australian Flexible Learning Framework (Framework). Her previous Framework roles include being the South Australian Innovations Coordinator, and the Project Manager for the Inclusive e-Learning for Youth Project. Allison has also been the E-Learning Development Co-ordinator for TAFE SA.

Allison has been involved in the vocational education and training (VET) sector for nearly 10 years and has over six years experience in creating e-learning environment and experiences for students and staff. She has experience teaching and facilitating in areas of Business Finance, Administration and Small Business Management.

## **ePortfolio implementation in Medical Radiation: enabling ongoing professional development for higher education students**

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**Hayley Timms**

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### **Abstract**

The use of ePortfolios as a way of documenting professional development and achievement for accreditation purposes will be increasingly demanded by registration boards. This has many implications for Higher Education institutions, especially ATN universities that will need to introduce their students to ePortfolios in order to address industry accreditation and equip them with the necessary skills and competencies to practice. However, with curriculums that have significant content the ability to create this time for training and implementation is problematic. This case study documents the achievements of fifty, third year medical radiation students at the University of South Australia. The University is currently exploring a number of ePortfolio platforms and has yet to commit itself to a single platform. In this indeterminate environment the teaching team introduced the ePortfolio in two stages over two, condensed, four-week courses and an eight-week clinical placement. In the first stage of the implementation of the ePortfolio, a course blog was made available to students for support to overcome isolation from each other while on clinical placement. Students were tasked with uploading medical radiation images (x-rays) and asked to critique and reflect on their work. In the second stage of implementation the students were set tasks in a practical workbook and asked to upload and record information on various images, readings and results. They were also asked to create a Webfolio to showcase their practical work and discuss the processes used and the outcomes achieved. Student participation with the ePortfolio was above expectations and the overall student experience was positive as evidenced by informal class discussions and emails to staff. A formal evaluation is currently underway. The success of the ePortfolio implementation was attributed to a number of factors. Two one-hour sessions of training so the students were confident with the software, a staged exposure to the desired features so that students weren't overwhelmed and most importantly ensuring the students felt a sense of ownership over the whole process. The ePortfolio equipped students with the capability to showcase their work, their experience and introduced them to the idea of life-long learning using an online tool.

## **Biographies**

### **Denise Ogilvie**

Denise has been course co-ordinator of 1st, 2nd & 3rd year courses of the Medical Radiation program for the last 4 years and has taught at the University of South Australia since 2006. Denise brings to her teaching an understanding of medical radiation gleaned from 30 years experience as a practicing radiographer. This experience has been crucial to the re-development of the Medical Radiation degree and her understanding of the potential of ePortfolio. Denise has, in a very short time at University, developed a reputation for being lecturer who is innovative in curriculum, rigorous in standards and able to form respectful, educative relationships with her students and this year has been nominated for a Learning and teaching Citation as well as an award for Community Engagement with Teaching.

### **Hayley Timms**

Hayley Timms is an Online Adviser supporting ePortfolio and online learning at the University of South Australia. She has been with the University for eleven years and currently supports the Schools of Nursing and Midwifery and Pharmacy and Medical Science. Hayley's role is to work collaboratively with Academic teaching staff to develop pedagogically sound online tools within the University's online environment, Learnonline. Hayley's speciality is ePortfolio and was responsible for supporting technical aspects of the ePortfolio pilot across all four UniSA campuses. Hayley holds a BA (Hons) in Professional and Creative Communication from the University of South Australia.



## ePortfolios, employability and standards: how might emerging ePortfolio systems assist the implementation of national policies of academic standards and key graduate capabilities?

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### **Abstract**

Standards and course structures have been topics of interest in international higher education for some time. With the emergence of the Bologna agreement in Europe, the Tuning process has played a major role in recent years in the restructure and ‘harmonisation’ of degree curricula to ensure graduate attainment of key capabilities for employment and civic engagement. This has included extensive consultation with key stakeholders including graduates, employers and academics (Villa, González, Auzmendi, Beza-nilla, & Laka, 2008). Similar movements are afoot in international contexts: the OECD is currently managing the feasibility study of AHELO (Assessment of Higher Education Learning Outcomes) which includes standardized testing of generic competences and discipline knowledge (OECD Programme on Institutional Management in Higher Education, 2009). The Australian government has recently announced a clear focus on related issues: widening participation (equity) and clear minimum quality benchmarks (standards) will be funding-driven requirements of all higher education institutions by 2011 (Gillard, 2010). The government has called on universities across the sector to ‘to take stock, assess what needs improvement and to develop the plans and tools to lift the quality of teaching, lift the engagement of students and lift the expectations and performance of teachers and researchers’ (Gillard, 2010). To drive this agenda, the Government is establishing a new national regulatory and quality agency for higher education, Tertiary Education Quality and Standards Agency (TEQSA), an independent body with powers to regulate university and non-university higher education providers, monitor quality and set standards. The Australian Learning and Teaching Council has the task of facilitating and coordinating discipline communities’ definitions of academic standards—that is, learning outcomes described in terms of core discipline knowledge and core discipline-specific skills. This includes the negotiation of up to six high level core learning outcomes (minimum academic standards) at Bachelor level in key disciplines, and subsequently up to 10 at each university (Australian Learning and Teaching Council, 2009).

Against this background, this paper explores the potential of ePortfolios to play a major role in assuring standards and achievement of generic and academic competences. Web 2.0 functionality, built into newer systems such as PebblePad, Mahara and Curtin University’s iPortfolio, enable a very interactive and collaborative approach to the creation, management and assurance of evidence of students’ achievements. Regardless of whether

standardized testing is found to be a way of assuring standards in Australia and other national education systems, the ePortfolio allows ongoing self-reflection, iterative improvement of artefacts, and most importantly, assessment for learning (formative assessment) by peers and students themselves (Hallam et al., 2008; Oliver & von Konsky, 2009; Oliver, von Konsky, Jones, Ferns, & Tucker, 2009a; Oliver, von Konsky, Jones, Ferns, & Tucker, 2009b). Features like self-rating systems, prevalent in Web 2.0 facilities like iTunes, TripAdvisor, and so on, are being adapted to enable students to assess themselves and each other on key achievements. With students' permission, these data can be harvested at the level of course or university to provide another source of data on self, peer and teacher/mentor assessment of achievement.

Moreover, data gathering systems such as those which canvass graduate, employer and faculty perceptions of the importance of key capabilities in early professional success can likewise be aggregated and presented directly to students within ePortfolio systems to assist them to develop the capabilities that count for professional success. This paper will demonstrate examples of early iterations of such systems, as well as how future developments might be conceived, implemented and operationalised to further national agendas around standards.

## **Biography**

### **Beverley Oliver**

Professor Beverley Oliver is Director of Teaching and Learning at Curtin University where she has had extensive experience in leading teaching and learning projects in creating and implementing eVALUate (the University's online student feedback system which was recognised with a Carrick Citation in 2007) and Curriculum 2010 (a university-wide curriculum reform initiative which included extensive engagement with teaching staff adoption of curriculum mapping tools and activities to inform curriculum review). Curriculum 2010 and eVALUate were commended in Curtin's 2009 AUQA Audit. Professor Oliver publishes in a range of teaching and learning areas, including student evaluation, curriculum renewal, graduate employability, ePortfolios and student ownership and use of emerging devices and Web 2.0 applications. Professor Oliver was a member of the Project Team for the recently completed ALTC Leadership Grant Building Academic Leadership Capability at the Course Level: Developing Course Coordinators as Academic Leaders. She is Project Leader for the ALTC Competitive Grant Building Course Team Capacity for Graduate Employability and an ALTC Fellow. Her Fellowship is entitled Benchmarking partnerships for graduate employability.

## The Society and College of Radiographers (SCOR): ePortfolio at the heart of professional development activities

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### Abstract

Effective engagement in CPD is now a requirement of many professional bodies across the world. CPD systems, although diverse, fall into two categories — *input driven* and *output driven*. Input driven systems generally count the number of hours individuals engage in CPD activities. Frequently they are supported by a Learning Management Systems which provides a structure for the individual and monitoring information for the organisation. Output driven systems on the other hand are focused on the impact that CPD has actually had on someone's practice. They can also be self-managed by the member themselves, which allows them to develop based on the needs of the individual role.

The Institute of Continuing Professional Development (ICPD) recently found that although many professions use a combination of both the input and output systems, they are increasingly turning to the more effective output systems. This is our own professional experience, having worked with many different organisations to implement output based systems.

This shift is largely due to the introduction of more complex personal development plans, which have been designed to be responsive to individual work requirements and ensure professionals engage in CPD and training that is most effective in supporting them in their professional duties. This not only makes CPD relevant to them, it engages them more fully in the learning process.

However, with the migration to output driven systems, the study found that some professional bodies are finding it increasingly difficult to implement an effective system of compliance within their organisation. There is now however a number of web-based solutions available, which use an ePortfolio that have now made the output model a viable option for many professional bodies.

Our proposed case study will feature the Society and College of Radiographers (SCOR) which has implemented over the past four years an output based system for its 19,000 members. Their flexible and easy to use ePortfolio lies at the heart of all SCOR's professional development activities. The case study will also illustrate how ePortfolio solutions are now being used by many other professional bodies from different sectors in the UK to meet a number of varied requirements.

The case study will demonstrate that a well designed and fit-for-purpose ePortfolio is one of the best ways to evidence the impact of learning on professional and vocational practice.

## Biography

### Chris Peat

Chris Peat has substantial experience of vocational training and learning and is recognised as an expert in the application of ePortfolios to manage and assess vocational learning and professional development. He has worked with a number of professional and awarding bodies and developed ePortfolios to meet their specific requirements.

Following a 25 year career in public service he now works for Axia Interactive Media a small UK based company, who have developed the pioneering NOW.net platform, that is the basis of all the sites the company has developed for professional bodies and vocational training centres. It is being used by thousands of people to capture evidence of their competence and professional development and where required to have it assessed and audited.

In 2002 he was awarded an OBE in recognition of his services to Adult Learning.

## ePortfolios in professional practice — the use of PebblePad by professional associations

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### **Abstract**

*A growing number of professional associations are utilising the ePortfolio process to provide evidence of the attainment of professional standards ..... or for current members to demonstrate active and ongoing professional development to facilitate their reaccreditation as a professional.*  
(AeP, 2009)

Many professions, trades and occupations in Australia are making moves towards national registration of members. As one example, July 1 2010 sees the establishment of a single national registration and accreditation system for ten of the major health professions (National Health Workforce Taskforce, 2010). These sorts of reforms will bring with them a requirement to be able guarantee the professional standards, and track and document the continuing professional development (CPD), of members on a scale not previously encountered. Personal learning systems and ePortfolios provide a vehicle for professional bodies to meet these obligations.

This case study describes the use of a personal learning system by a major professional body in the United Kingdom to manage the CPD requirements of its members. The Institute for Learning (IfL) is the professional body for teachers and trainers in the Further Education (FE) and skills sectors in the UK. It currently has more than 200,000 members. All members must record and declare 30 hours of CPD (pro-rata for part-time) by the end of August each year to be eligible to maintain their membership. This CPD declaration requires not only a log of activities completed but also evidence of reflection on the learning gained and the impact of the PD on practice.

The IfL worked with Pebble Learning, the providers of the personal learning system PebblePad, to adapt the system to meet the needs of their members and their CPD requirements. REfLECT, the online personal learning space for IfL members, was established in April 2008 and is now used by 90,000 members to support their CPD. Members can record their CPD in REfLECT and declare their CPD to the IfL through REfLECT. Importantly the system has been developed to share data with the institutional system, the

membership database, without compromising any of the personal aspects of REfLECT. This means that members have access to a powerful personal learning space which they can use both personally and professionally, often reporting to multiple employers and/or multiple professions, to record experiences, achievements, and aspirations.

In their 2008/09 Review of CPD the IfL reported that:

*On the whole, those members who used REfLECT had the most substantial evidence in terms of discussing their reasons for undertaking an activity, what they had gained from it and the impact it had on their practice and their learners.* (IfL, 2009, p. 14)

This case study will include a demonstration of the REfLECT system and reflections from both the IfL and its members about the use of REfLECT to support CPD.

## Biographies

### Alison Poot

Alison is the Australian-based PebblePad ePortfolio Consultant and manages Pebble Learning AU. She works with education institutions and professional bodies across Australia and New Zealand to support the implementation of PebblePad.

Alison has been involved in the Higher Education sector for more than 20 years in a variety of roles including student counselling, coordination of first year and retention programs, evaluation and quality assurance, and project management. She moved to Pebble Learning early in 2010 from the University of Tasmania where, amongst other tasks, she managed the ePortfolio Project which included the implementation of PebblePad.

### Shane Sutherland

Shane Sutherland is the Development Director at Pebble Learning. He is an active contributor to the ePortfolio community being a member of the Becta ePortfolio Experts Group; the International Coalition for ePortfolio Research and the JISC-CETIS eP SIG. Shane has contributed to, or managed, a number of JISC projects including ePISTLE; LIPID; eAPEL; MeLAS; PortisHEad and Flourish.

Shane previously worked as a Principle Lecturer at the University of Wolverhampton with roles in staff development and teacher education. This earlier work brought him into intimate contact with IWBs, VLEs and PDAs – ePs are the perfect two-letter antidote.

Shane's diverse learning career evolved into a varied teaching career culminating with roles in teacher training and staff development; where he specialised in promoting the use of technology to support learning. Shane now uses his broad learning experience to influence the design of the PebblePad ePortfolio system.



### **Colin Dalziel**

Colin has extensive experience with learning technologies dating back to 1996. Significant projects include a major contribution to the development of the University of Wolverhampton's online learning environment, WOLF.

Working on a number of JISC funded projects Colin has acted as a technical consultant on the ePISTLE ePortfolio project, as project manager on the JISC funded LIPID interoperability implementation project and technical consultant on the PortisHEad project investigating the potential of ePortfolios in supporting application to higher education.

In his role as operations director for Pebble Learning Colin supports the development of the PebblePad ePortfolio system and its use in an increasing number of organisations around the world.

### **Lee Davies**

Lee Davies is Deputy Chief Executive of the Institute for Learning (IfL), the professional body for teachers, tutors, trainers and others teaching or training in further education. Lee has been instrumental in the professionalisation reforms that have taken place in further education, most notably the introduction of Qualified Teacher Learning and Skills (QTLS) status and the model of professional practice introduced by IfL through which its members demonstrate they remain in good standing through continuing professional development. Lee is a strong advocate for the use of technology to support learning, both in terms of the strategies teachers and trainers adopt to harness the technologies learners own and the place of technology in individual professional learning.

## The Vumi ePortfolio experience @ the Metropolitan South Institute of TAFE (MSIT)

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### Abstract

Since 2008 the Metropolitan South Institute of TAFE (MSIT) has been embracing the implementation of an ePortfolio for both teacher and student application within the institute. Working collaboratively with the Creative Industries Skills Council (CISC), staff from the institute were involved from the initial research focus group and trial through to the classroom implementation of the first pilot.

The Creative Industries Skills Council was asked by Arts Queensland to develop a prototype ePortfolio to assist young creators to better profile their talents to industry. MSIT has had a good working relationship with CISC over many years and were eager to be involved in the initiative. Over the next two years MSIT worked with the skills council for the duration of the initiative and over this time the fully developed Vumi ePortfolio technology emerged.

This case study will report on the business drivers that supported the introduction of the Vumi ePortfolio technology for MSIT as well as present the outcomes, for both students and staff, that will see the further rollout across the institute in 2011. This session will outline:

- Why MSIT has decided to introduce the use of ePortfolios
- How we got started
- Who is using it at MSIT and how it is being used
- Outcomes after twelve months of the pilot
- The future for MSIT and ePortfolios

## Case study presentation resources



### The VUMI ePortfolio experience @ the Metropolitan South Institute of TAFE (MSIT)

ePortfolios Australia Conference 2010 (EAC 2010)  
Melbourne, 3-4 November 2010.

**Presenters:**  
Jenny Ryan, VUMI ePortfolio Manager (CISC)  
Carol Chambers, Manager Innovation & Learning (MSIT)  
Andrea Smith, Music Business Teacher (MSIT)

Metropolitan South Institute of TAFE TAFE Queensland

Slide No. 1



### MSIT's ePortfolio search was driven by the following educational requirements:

- The ability to record and store multimedia enabled staff profiles of educational qualifications, teaching and industry experience work files for both teachers and tutors. (Auditors would view the online staff profiles)
- The ability for student's work and assessment items to be uploaded and stored, classified against their qualification, competencies or clustered competencies
- The potential for the ePortfolio to be utilised for job and career progression for both staff and students. Self managed by them
- A lifelong resource which meant it must have portability

Metropolitan South Institute of TAFE TAFE Queensland

Slide No. 2

### The business drivers that governed our decision to implement the VUMI ePortfolio were:

- Portability of VUMI ePortfolio for staff and students
- Externally hosted ICT solution
- No upfront investment required by MSIT
- Strengthening the business relationship between MSIT and the Creative Industries Skills Council (CISC)

Metropolitan South Institute of TAFE TAFE Queensland

Slide No. 3

### The VUMI ePortfolio for MSIT was launched in 2009



Metropolitan South Institute of TAFE TAFE Queensland

Slide No. 5

### Establishing effective practice :

- Initial trials with Creative Industries students
- Later trials with Creative Industries staff and RPL co-ordinators
- Implemented with Music Department

Metropolitan South Institute of TAFE TAFE Queensland

Slide No. 6

### First classroom practice:

- *Units chosen:*
  - *Plan A Career In Music*
  - *Collect & Organise Information*
- *Assessment:*
  - *Development of a career plan and a portfolio that demonstrates current skills and experience*

Slide No. 7



### 2. Reviewing existing assessment:

- *Original assessment consisted of a paper template*
- *Key changes made which consisted of a step by step guide to inputting information into the VUMI ePortfolio*

Slide No. 8



### Pre-enrolment demonstration:

- *Marketing based ePortfolio*
- *Sent to potential students*
- *Successful translation of enquiries to enrolments was up by approximately 35%*

Slide No. 9



Slide No. 10



Slide No. 11



### Demonstration to students:

- *Initial demonstration in a lecture environment*
- *Shown ePortfolio samples*
- *Use of VUMI in relation to the assessment was outlined*

Slide No. 12





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Queensland Government  
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### Reassessing VUMI ePortfolio:

- Assessments visually exciting
- Participants more engaged
- Feedback and conversation easy for teachers
- Easy to save copies with feedback included
- Environmentally sustainable

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### History of the VUMI ePortfolio:

- Originated from Arts Queensland Project
- Initially developed for Creative Industries
- Industry and Training/Education applications
- First twelve months of rollout
- Where to from here

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TAFE Queensland  
Queensland Government  
Department of Education, Training and Skills

### More information regarding VUMI ePortfolio:

- Attend the Vendors Session tonight
- Go to [www.vumi.com.au](http://www.vumi.com.au) to view more case studies
- Or Contact :  
Jenny Ryan  
M: 0408097670  
E: [jenny.ryan@vumi.com.au](mailto:jenny.ryan@vumi.com.au)

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## **Biographies**

### **Jenny Ryan**

Jenny has worked in the creative and education sectors for many years. Over the past two years Jenny has been the project manager for the Skills Council's VUMI ePortfolio project, a seed funded project from Arts Queensland. She is currently coordinating the distribution of VUMI across the Arts, Education and Training sectors and other industry sectors nationally and internationally.

### **Carol Chambers**

In the role of Manager Innovation and Learning at the Metropolitan South Institute of TAFE (MSIT) Carol worked collaboratively with the Creative Skills Industry Council in Queensland during the prototype planning, test phase and the pilot implementation phase with the Music Business team at MSIT. Carol has over twenty years experience in leading the update of educational technologies that enhance the student learning experience.

### **Andrea Smith**

Andrea is a music and arts business educator at Metropolitan South Institute of TAFE in QLD. With a background in music venue and band management, Andrea still plays an active role in the area with many of her former students now in key roles in the Australian Music industry. Prior to that Andrea studied and practiced Graphic Design, which has assisted her in her understanding of the use of ePortfolios and other blended learning methods of training. Andrea has been using VUMI ePortfolio since its inception.



## Resource development for supporting ePortfolio engagement

**Kitty Ryan**

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**Lynn McAllister**

Queensland University of Technology

### **Abstract**

QUT's ePortfolio tool is a university wide program built within existing institutional systems. The ePortfolio program provides every QUT graduate with lifelong access to the online space and support resources to facilitate lifelong learning and professional development.

Just as the use of QUT's ePortfolio has evolved since its 2003 inception, so too has the student model of engagement. A number of faculties such as education and nursing have incorporated their industry standards and competencies for state-wide and nationwide registration into the ePortfolio, adding to the existing set of graduate capabilities. These developments have brought the need for a flexible support framework to the fore, in turn, increasing the momentum in uptake and forging strong links to curriculum.

This paper will explore the various methods used for supporting the student ePortfolio experience including the design and use of guides, videos, interactive online material and hands on workshops. Frequent reviews and the gathering of staff and student feedback ensure the ongoing relevance and flexibility of the support model. At the outset, promotion of the tool and how to use it was the main focus. Methods of engagement included paper flyers, videos and guides designed to promote the benefits of the Student ePortfolio and its underpinning philosophy.

As ePortfolio has become embedded in curriculum, the need for more detailed and interactive guides and resources has become increasingly apparent. Significantly and mainly evidenced through 'hands on' workshops, the core process of critical reflection has shifted and is now a major focus of the support model. The ongoing development and refinement of support material is now allowing us to move beyond the tool itself, whilst at the same time, maintaining technical support structures and promoting the benefits of lifelong access.

## Biography

### **Kitty Ryan**

Kitty completed an Arts degree at Flinders University in 1988, majoring in English. Subsequent to this, she completed a Diploma of Education in secondary teaching in English and ESL. Kitty moved to the UK in 1994 expecting to continue her career in ESL teaching, instead she began a career in IT which has spanned 13 years. Kitty's experience includes IT support and project work. Whilst at QUT she has been involved with the development of support resources and training for QUT's Student ePortfolio.

## Theorising a model for teaching and assessing reflective learning in higher education

**Mary Ryan**

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**Michael Ryan**

Queensland University of Technology

### **Abstract**

The value of reflective learning is widely accepted in educational circles as a means of improving students' lifelong learning and professional practice in higher education. A critical issue, however, is that reflection is a complex process that takes time to do well. There is also evidence to suggest that reflective writing by higher education cohorts tends to be superficial unless it is approached in a consistent and systematic way. Most researchers and commentators agree that there are different types or hierarchical levels of reflection. The literature suggests that there are at least four different levels of reflection along a depth continuum. These range from descriptive accounts, to different levels of mental processing, to transformative, critical or intensive reflection.

Academic reflection, as opposed to personal reflection, generally involves a conscious and stated purpose, and needs to show evidence of learning and a growing professional knowledge. This type of purposeful reflection, which is generally the aim in higher education courses, and is the focus of this paper, must ultimately reach the critical level for deep, active learning to occur. Such reflection is underpinned by a transformative approach to learning that sees the pedagogical process as one of knowledge transformation rather than knowledge transmission. When students are provided with opportunities to examine and reflect upon their beliefs, philosophies and practices, they are more likely to see themselves as active change agents and lifelong learners within their professions.

We suggest that careful consideration is needed to plan deliberate and explicit strategies for improving students' reflective learning in higher education. The pedagogic field of higher education is influenced by a number of socio-cognitive factors, including the developmental stage of the learner, the disciplinary context and the prior knowledge of both students and academics. Thus, we propose a model for teaching and assessing reflective learning, which is directly concerned with pedagogical decision-making and which accounts for these influences on the pedagogic field of higher education. We contend that many university courses may have worthwhile reflective components, but that a more consistent approach, using a shared language and a transferable framework, will enable students to develop critical reflective skills for lifelong learning.

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### **Biography**

#### **Mary Ryan**

Dr Mary Ryan is a senior lecturer in the School of Cultural and Language Studies in Education at the Queensland University of Technology in Brisbane. Her main interests lie in the areas of reflective writing in higher education, multimodal reflection; literacy education, authentic and transdisciplinary learning, critical pedagogy and youth culture.

## ePortfolios as a sustainable assessment tool in first year engineering

**Elizabeth Smith**

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### Abstract

The University of South Australia uses online ePortfolios as an assessment tool in its common first year Engineering program. When first introduced the ePortfolio received mixed feedback from students. Some students enjoyed the flexibility of the online assessment and found it a useful resource for collating examples of their work and reflecting on learning. While other students believed it to be a waste of time, providing limited support to their professional development as engineers. The ePortfolio is now in its third year and since its initiation student feedback has been used to modify how the ePortfolios are used, how they are assessed and the method of training provided. This paper examines the results of a survey performed in 2009 and again in 2010 to better understand the literacy, comfort and access levels that first year engineering students have with computers, and how this affects their response to using ePortfolios.

**Keywords:** *assessment, first year engineering*

### Introduction

An ePortfolio is used to record '*personal learning and achievements supported by reflective activities through which learners can gain greater understanding of their development and progress over time*' (DfES, 2005). EPortfolios can be used as a form of assessment, including self and peer assessment, in the form of diaries, blogs or wikis (JISC, 2007). The use of electronic portfolios as an assessment component is gaining popularity in engineering programs, particularly in those courses targeted towards the development of professional, non-technical skills such as communication and teamwork. It is assumed that today's generation of students is more familiar with working with computers and an online environment than ever before and will thus embrace and adapt quickly to the use of ePortfolios. However, is this always the case for all students — particularly for international students from countries where computer access is low or for mature age students returning to study?

At the University of South Australia (UniSA) an ePortfolio is used as a major assessment component in the first year, first semester professional practice course *Sustainable Engineering Practice* (SEP). The course is taken by all engineering degree students (civil, electrical and mechanical degrees) as well as students undertaking an Associate Degree pathway program. The student body is diverse with a significant number of international, recognised equity group and mature age students. The ePortfolio is now in its third year. It was evident when it was

introduced that not all students were familiar and comfortable with the online medium. To determine the breadth of the spectrum of computer literacy amongst the students, and what factors affect it, a survey was conducted of students undertaking the course in 2009 and again in 2010. The survey looked at factors such as age, cultural background, previous education, previous exposure to computers and online communication such as blogs and how these factors influenced students' comfort levels with the ePortfolio assessment. The paper will discuss findings from the 2009 and 2010 surveys and the strategies implemented to help make ePortfolios a sustainable assessment tool.

### ePortfolios in the course Sustainable Engineering Practice

The *Sustainable Engineering Practice* course involved the entire first year engineering cohort of approximately 200 students, located both on the main campus and at a regional campus at Whyalla (400 km from the Adelaide campus). The aim of the course is to introduce students to the profession of engineering and how it is practiced within a sustainable context. The course also helps students to develop some of the core working skills of an engineer including; locating and using information, critical analysis and reflective practice, effective teamwork, engineering report writing and effective presentations. These skills are developed by working on real engineering problems in an international context as well as meeting with engineers from industry. The course is structured so that students attend two one-hour lectures and one two-hour tutorial per week. In the course students are required to work on three assessment tasks, as shown in Table 1 below. The first assessment task requires students to write an individual report on the role of engineers in a particular industry or sector of the profession. The second assessment task requires students to use an online ePortfolio program to reflect on industry interactions, SEP course content, self awareness exercises and reflection/evaluation of individual contributions to the group project. The final assessment task is the Engineers Without Borders (EWB) Challenge (EWB, 2009). This requires students to work in an interdisciplinary group of 4 to 6 to design a sustainable engineering solution to a chosen EWB problem. The design problems are based in a location and in a subject area with which the students are unfamiliar. Consequently the project requires students to undertake considerable research to develop a design solution.

**Table 1:** Sustainable Engineering Practice Assessment Tasks

Form of assessment	Length	Weighting
Assessment 1 — Individual Report (submitted as softcopy Word Document)	1000 words	15%
Assessment 2 — ePortfolio	~2000 words	45%
Assessment 3 — Major Group Project Work in groups of 6 to complete a project report and presentation (report submitted as softcopy Word Document)	1500 words (per student)	40%

When the course was first run in 2008, both wiki and blog online programs were selected for students to compile their ePortfolio. The wiki was used to compile a portfolio to help in the transition from student to professional. The blog was used to help develop reflective thinking, and assist with learning interaction. Since the university did not have its own wiki or blog software, third party openly accessible software was used. PBworks (formerly called PBwiki, [www.pbworks.com](http://www.pbworks.com)) and blogger



([www.blogger.com](http://www.blogger.com)) were selected. The use of Blogs and wikis in the SEP course is discussed in detail by Smith, Mills and Myers (2009).

The wiki was selected for its adaptability to publishing several pages within the one site, but student feedback suggested it was less user friendly. Blogs, on the other hand, were straightforward to use but not as adaptable as a wiki for organising sections of information. To create the wiki and Blog students were provided with information on how to get started. The variable level of student computer literacy was shown as some students were able to get started very easily while others found it hard to adapt to the process of the online environment.

The use of the two online environments was difficult to manage and mark for 200 students. Course coordinators and tutors found it logistically difficult to access multiple websites and pages for each student. Associated with this, individual students received varying degrees of feedback from their tutors. Since there was no formal program scheduled for providing feedback to students, discrepancies between the frequency of feedback was detected. There was also a difficulty with acquiring support in the operation of the wiki and blog pages. The wiki and blog sites used were from commercially operated entities, and support to requests from students who lost login details and passwords, and thus access to their own work, was not found to be sufficient from the website operators.

The time commitment for both staff and students is increased by working in this online environment. Students required help in getting started plus ongoing support with the software, increasing the number of emails, discussion group posts and face to face consultation than would normally be expected in a course such as this. The ongoing monitoring of the wiki and blog posts and the provision of regular formative feedback was only achievable by each tutor monitoring their own class. The course coordinators initially made an attempt to check on all wikis and blogs, but this was very time consuming and not achievable. However, the course coordinators and tutors all felt that the process did give them an excellent opportunity to monitor progress and provide early intervention and support for students, which is critically important for first year, first semester students (Aziz, 2008).

After completion of the first delivery of the course in 2008, the teaching team met several times to discuss the evaluation outcomes from both formal course evaluations and student feedback from the ePortfolios and put in place several modifications for the course delivery in 2009. These included:

- An alternative program was selected called PebblePad ([www.pebblepad.co.uk](http://www.pebblepad.co.uk)), which includes both a blog and wiki type environment. This new program was used in the SEP course in 2009 (and again in 2010) and is easier for teaching staff to access, manage and mark.
- Providing a help-desk session for students in the first couple of weeks to enable all students to get their online portfolio commenced. This was also followed up in tutorials, where students were helped by tutors.
- Ensuring all course tutors are committed to the idea of online portfolios within the course and that they provide scheduled formative feedback of the online portfolio. This was achieved by using tutors who are more familiar and positive in working in the online environment, and a stricter schedule and guidelines for providing feedback were established.

These changes were implemented, and although the feedback from the 2009 class, was more positive than the 2008 class, only 40% of students found their blogs (a component of their ePortfolio) useful. Consequently further improvement to the online pedagogy was required. This included:

- Creation of a template to help students format and structure their ePortfolio, while still providing some scope for personalisation. This reduced the time needed for students to become familiar with the software as well as the time needed for staff to assess and provide feedback on submissions, since the format was more consistent.
- Help students see the importance of the ePortfolio concept, examples of how it can be used for ongoing professional development and acquisition of chartered engineering status were discussed.
- A greater emphasis was placed in the student orientation in 2010 to develop the student's skills with the use of PebblePad, so that prior to starting the SEP course students have been introduced to and used the online software.
- Additional training provided for staff and students, both face to face and through online documentation including a weekly help desk run for the entire study period. This involved the course coordinator running one intensive three hour training session for tutors prior to the start of teaching and tutors were required to create their own ePortfolio. Additional one on one training was then provided to staff when the first ePortfolio feedback was due, this was again provided by the course coordinator. The course coordinator and tutors would share the running of a weekly help desk for students, and tutors provide assistance to students during tutorials to ensure all students had created their ePortfolio within the first 3 weeks.

### Results from computer literacy survey

To understand the computer literacy background of UniSA's first year engineering cohort, and how this affects the students' response to ePortfolios, a survey of students in the 2009 Sustainable Engineering Practice course was performed and then a similar survey was performed again in 2010. The survey asked questions to gauge students' level of computer literacy, computer background, use of internet based social environments and response to ePortfolios. A total of 136 students from the 199 enrolled responded to the survey in 2009 and 147 students from the 195 enrolled responded to the survey in 2010. Of these, 12.7% of students were located at the Whyalla campus in 2009 and 5.2% in 2010. Students based in Whyalla were provided tuition via videos of lectures. Tutorials for these remote students were run via video conference in 2009 and by a local tutor based in Whyalla in 2010. The remaining students were based at the Adelaide campus. The characteristics of the survey respondents are shown in Table 2, where it can be seen that the majority of students for both 2009 and 2010 were male, school leavers, studying full time, born in Australia and under the age of 20.

**Table 2:** Characteristics of the survey respondents (2009 survey response, n = 136 and 2010 survey response n=147)

	2009 Survey Response					2010 Survey Response				
<b>Gender</b>	Male:	88.6%	Female:	11.4%		Male:	89%	Female:	11%	
<b>Student Status</b>	Full Time:	85.9%	Part Time:	12.1%		Full Time:	91.8%	Part Time:	8.2%	
<b>Study Location</b>	Adelaide:	87.3%	Whyalla:	12.7%		Adelaide:	94.8%	Whyalla:	5.2%	
<b>Birth Place</b>	Australia:	75.6%	Overseas:	24.4%		Australia:	63.2%	Overseas:	36.8%	
<b>Age</b>	<20 70.7%	20-24 18.0%	25-29 6.0%	30-34 3.8%	≥ 35 1.5%	<20 70.3%	20-24 16.9%	25-29 8.8%	30-34 2%	≥ 35 2%
<b>Discipline</b>	Assoc 15.9%	Civil 34.1%	Mech 25.4%	Elec 24.6%		Assoc 19.4%	Civil 29.5%	Mech 33.8%	Elec 17.3%	
<b>Last Education Setting</b>	TAFE 6.7%	HSchool 78.4%	Uni 14.9%			TAFE 18.6%	HSchool 71%	Uni 10.4%		

Students' computer and internet access is summarised in Table 3. Out of the students surveyed 97.7% had access to a computer at home in 2009 and 98% in 2010, with 72.8% having had access for more than 10 years in 2009 and 62.4% in 2010. When asked what their comfort level in using computers was, in 2009, 86.8% of students answered either comfortable or very comfortable, with less than 1% answering not comfortable. In 2010, 90.5% of students answered either comfortable or very comfortable, with less than 2% answering not comfortable.

A majority of students had access to the internet at home, but there were still 12.2% of students without access in 2009 and a much lower percentage (4.1%) in 2010. It can be assumed that a majority of students are used to communicating via email as in 2009, 98.5% indicated that they had email access prior to starting at the University, with 85.8% of students having had an email account for more than 5 years. In 2010, 99.3% of students indicated that they had email access prior to starting university, with 85.7% having had an email account for more than 5 years.

As expected, students were highly active in online social networking websites, with 75% of students having a Facebook account in 2009, which has increased further to 93.2% in 2010. MySpace was less popular with 41.2% of students having an account in 2009 and has further reduced in popularity with only 23.8% of students having an account in 2010. The number of students with a twitter or YouTube account has remained constant at around 5% and 40% respectively. This survey shows that the vast majority of students were comfortable with computer use and had ready access to computers and internet. A full analysis of the 2009 survey results is presented by Smith and Mills (2009a).

**Table 3:** Computer Background, % of all survey respondents from 2009 and 2010

	2009 Survey Response					2010 Survey Response				
Home access to computer	Yes: 97.7%		No: 2.3%			Yes: 98%		No: 2%		
Home internet access	Yes: 87.8%		No: 12.1%			Yes: 95.9%		No: 4.1%		
Email access prior to uni	Yes: 98.5%		No: 1.5%			Yes: 99.3%		No: 0.7%		
Comfort level in using computers	Not Comf 0.7%	Fairly Comf 12.5%	Comf 32.4%	Very Comf 54.4%		Not Comf 1.4%	Fairly Comf 8.1%	Comf 35.1%	Very Comf 55.4%	
How many years access to a computer	1 0.8%	2 0.8%	3 to 4 0.8%	5 to 9 24.8%	≥ 10 72.8%	1 1.4%	2 0%	3 to 4 2.8%	5 to 9 33.3%	≥ 10 62.4%
How many years since first email account	1 1.6%	2 0.8%	3 to 4 11.8%	5 to 9 60.6%	≥ 10 25.2%	1 1.4%	2 3.4%	3 to 4 9.6%	5 to 9 52.1%	≥ 10 33.6%
How often email checked	Hourly 12.6%	Daily 65.9%	Weekly 18.5%	Monthly 3.0%		Hourly 14.9%	Daily 62.8%	Weekly 21.6%	Monthly 0.7%	
Have an account with...	MySpace 41.2%	Twitter 5.2%	Facebook 74.3%	YouTube 40.4%		MySpace 23.8%	Twitter 5.4%	Facebook 93.2%	YouTube 40.8%	

## Discussion

In the 2010 survey, students were asked if they found the ePortfolio a useful tool for reflecting on their learning and professional development, in both cases 75% of students answered yes. When asked if they enjoyed using the online ePortfolio tool (PebblePad), 68% of students agreed. These results are a significant improvement on the feedback received from the 2009 cohort where only 40% of students found their ePortfolio useful.

To determine what impact student computer literacy background had on the response to the ePortfolios, the results from the 2010 survey have been sorted based on age, comfort in using computers, location of birth and if they had previously used ePortfolios before. These results are presented in Table 4.

**Table 4:** Usefulness and enjoyment of using ePortfolios, % response by age, location of birth, level of computer comfort and previous use of ePortfolios

Age	<20	20–24	25–29	≥30
Found the ePortfolio a useful tool for reflecting on their learning	73.5%	84%	69.2%	100%
Found the ePortfolio a useful tool for reflecting on their professional development	73%	79.2%	77%	66.7%
Enjoyed using an online ePortfolio	66%	83.3%	66.7%	40%
Location of birth	Born in Australia		NOT born in Australia	
Found the ePortfolio a useful tool for reflecting on their learning	78.9%		71.4%	
Found the ePortfolio a useful tool for reflecting on their professional development	68.9%		78.6%	
Enjoyed using an online ePortfolio	60.7%		75.5%	

Level of computer comfort	Not/Fairly Comfortable	Comfortable	Very Comfortable
Found the ePortfolio a useful tool for reflecting on their learning	50%	80%	78.1%
Found the ePortfolio a useful tool for reflecting on their professional development	64.3%	74%	76%
Enjoyed using an online ePortfolio	46.2%	75.5%	67.1%
Previous use of ePortfolios	Used ePortfolios prior to course	NOT used ePortfolios prior to course	
Found the ePortfolio a useful tool for reflecting on their learning	93.8%	73.8%	
Found the ePortfolio a useful tool for reflecting on their professional development	87.5%	72.4%	
Enjoyed using an online ePortfolio	80%	66.7%	

When sorted by age the results indicate that students under 24 found the ePortfolios more useful for reflecting on their professional development and they also found it more enjoyable to use than the older students. All students over 30 found the ePortfolio a useful tool for reflecting on their learning however only 66.7% found it a useful tool for reflecting on their professional development and 40% enjoyed using the ePortfolio.

When sorted by level of comfort in using computers the results indicate that over 75% of those students either feeling comfortable or very comfortable in using computers found the ePortfolio useful with over 65% enjoying using them. However 50% of students with lesser computer skills did not find them useful for reflecting on learning and 53.8% did not enjoy using the ePortfolio.

Many Australian students are now introduced to ePortfolios in high school where they use an online ePortfolio tool such as Studywiz ([www.studywiz.com](http://www.studywiz.com)) to help build a secure online portfolio of work, achievements and future aspirations. It was assumed that the UniSA 2010 first year engineering cohort would include some students who had previously used such tools in High School. However, surprisingly none of the students had created an ePortfolio in High School and 14.8% of students had created an ePortfolio in a previous university course. When sorted by previous use of ePortfolios the results indicate that over 85% of those students who had previously used ePortfolios found them more useful for reflecting on learning and professional development and 80% found them enjoyable to use compared to less than 75% and 67% respectively for those students who have not used ePortfolios before.

These results show that age and location of birth do make some difference, however it is level of computer comfort and previous use that affects student response to ePortfolios more. This further reinforces that it is vital for the success of online assessment to provide adequate training to students in using the ePortfolio software. Although it can be assumed students are comfortable in communicating online, some software is more familiar than others and it is that familiarity and comfort that is necessary for students to embrace and effectively use the software (Smith, 2010).

## Student Feedback

In the survey of the 2010 cohort, students were invited to comment on the use of the ePortfolios. A majority of the negative feedback was related to the software used to create the ePortfolio rather than the ePortfolio concept itself, such as the perceived lack of functionality of the program, time required to learn and use the software and frustration with technical problems, as highlighted by these comments from students;

*While the final product may look good, working with PebblePad is horrible*  
*Annoying to use, very limited editing, no HTML*  
*Freeze and crash when you need it the most*

Some students commented that the ePortfolio software was difficult to use;

*The ePortfolio is really hard to use*  
*Hard to use fiddly & waste of time*

While others found it a useful and easy tool to use;

*Easy to use*  
*Easy to access*  
*Useful tool*

Some students would prefer to use more standard submission methods that they are familiar with rather than the unfamiliar online ePortfolios. As discussed by these students;

*To (sic) much of a pain I'd rather type on Microsoft word*  
*I believe Microsoft word is a more useful tool than PebblePad*  
*I prefer physical interactions for assessments*

While other students commented on the flexibility of the ePortfolio, stating that;

*It does not require any storage device to be brought to uni*  
*Do not need to leave the house*  
*You can keep things online and safe*

Due to the diverse computer literacy background of the students, no matter how much training is provided some students will adapt to this online environment with limited help, while others will struggle even with the significant help provided, as indicated by these comments from students;

*Online materials helpful the ePortfolio isn't difficult but time consuming*  
*It was a little difficult to use at first creating ePortfolio*  
*Still not confident with computers*

## Assessing online content

Tutors from a range of engineering and science backgrounds ran tutorial classes of 25 or less students. Each tutor assessed the online content for their own tutorial class in accordance with agreed course assessment guidelines. The ePortfolio assessment relied on tutors giving regular feedback to the students, but unfortunately not all tutors provided this feedback due to lack of time and/or training. Through further training of tutors this consistency of feedback between



classes has improved significantly. However, this still requires further monitoring as highlighted by these contradictory comments from students in different tutorial classes;

*It provides some decent feedback*

*No relevant feedback ever presented*

Marking of online content is not a quick or easy process (Smith, 2010). Although provided with a recommended template to structure their ePortfolios, not all students followed it and consequently some ePortfolios took a longer time to navigate through to ensure all content had been marked. In the ePortfolios students upload content in Microsoft Word Documents, PDFs and other file formats. Links to these documents are created in their ePortfolios and each time a tutor opens one of these links a separate window would open. This can become confusing and increase the time required to mark the assessment tasks. Further factors affecting workload when assessing ePortfolios are discussed by Strivens (2006).

The ePortfolio task for SEP contributed nearly half of the course grade. However student feedback suggests this weighting was too high compared to the workload required for the group project. In contrast staff believe the grade weighting appropriate for the time required to assess the ePortfolio task. Consequently the SEP ePortfolio requirements were modified for the 2010 delivery so they are more appropriate for the relative weight of the assessment task, without increasing staff time for its marking.

## Conclusion

Although there were some negative comments regarding the use of ePortfolios, over 75% of the 2010 student cohort found the ePortfolio a useful tool for reflecting on their learning and professional development and over 68% of the cohort enjoyed using the ePortfolio assessment method. This feedback is significantly more positive than in 2009 where only 40% of students found their ePortfolios useful. The number of negative comments towards the ePortfolio has also reduced, and while this is not conclusive evidence that the ePortfolio pedagogy has improved, it does raise hope that the changes made to the 2010 delivery has improved the students experience in using ePortfolios.

Changes made to the online ePortfolio pedagogy in the past three years has made it a far more sustainable assessment method than when it was first introduced. However, continual improvement is required to ensure that there is consistency of feedback between tutorial classes, student and staff training is appropriate and reducing the time required to assess the online content. Subsequent surveys on staff and students' perception of the ePortfolio pedagogy will be used to monitor its use.

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## Biography

### Elizabeth Smith

Elizabeth is currently a lecturer at the University of South Australia (UniSA) in the School of Natural and Built Environments (NBE) located at the Mawson Lakes Campus. Prior to commencing with UniSA in 2006, I was a research and consulting engineer with the Turbulence, Energy and Combustion Group based at the University of Adelaide, where I was working on my PhD.

I coordinate two first year engineering courses. A professional practice course 'Sustainable Engineering Practice' and an introduction to design course 'Engineering Design and Innovation'.

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## How do ePortfolios fit in a virtual campus?

**Roger Stack**

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### Abstract

This session outlines our journey online as a state-wide multi-campus post-year 10 learning organisation with about 20,000 students. We have explored a range of online learning services and environments over the last three years and are focussing increasingly on student-centred learning, richer online learning environments and mobile computing.

The ePortfolio is seen as an essential part of the development of learning-to-learn skills for Tasmanian Polytechnic students, and lies at the heart of reflective practice. The purpose of ePortfolios extends beyond RPL, or collection of evidence for assessment, to being integral to the Polytechnic vision of flexible, applied, connected and supported learning.

The Tasmanian Polytechnic is currently considering the impact that a widening range of Learning Management Systems, ePortfolio 'solutions' and immersive learning environments such as virtual worlds is having on learning and teaching, and the support structures for teachers and learners within the organisation.

We are exploring the notion of a 'virtual campus' where ePortfolios, online learning environments and support for learners might be integrated. Rapidly changing learning processes and evolving technologies makes this a very challenging notion.

This notion of a 'virtual campus' encompasses learning agenda such as ePortfolios, learning management systems, learning commons, immersive learning environments, recognition and support services, personalised learning and life-long learning. We are currently trialling and/or evaluating technologies and services that might meet this agenda such as WebCT, Moodle, Drupal, Mahara, Web 2.0 services, Wikis, Ning, SharePoint, Second Life, Open Simulator, GURU, QTImPlayer and various mobile devices.

This session is about reflecting on current practice and asking questions rather than presenting solutions.

- Which ICT services for learning should be provided by the organisation?
- What guidelines are needed if staff and students use external ICT services for learning?
- How do ePortfolios integrate with other ICT services on and off campus?
- Is it possible to build a coherent and adaptive 'virtual campus' with clearly visible services, support and policies that are accessible from a wide range of devices and locations?

## Biography

### **Roger Stack**

Roger Stack is a Flexible Learning Facilitator at the Tasmanian Polytechnic and has responsibility for the implementation of ePortfolios which commenced in 2009 with an Australian Flexible Learning Framework project to evaluate Mahara.

## Personal Learning Networks: creating dynamic and participatory knowledge environments

**Adam Staples**

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**Laura Sanchez**

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### Abstract

This case study sets out to map the potential of Personal Learning Networks (PLN) in developing lifelong learning, information dissemination and knowledge creation within a community of practice comprised of pre-service teachers, recently graduated teachers and experienced teachers. Utilising both the sedentary content of a traditional ePortfolio and the organic functionality of increasingly accessible interactive environments, the PLN embraces content synthesis, Web 2.0 technology, emerging learning styles, the realisation of graduate attributes, continuing professional development and effective participation in the workforce.

Coordinated by an education lecturer from the Melbourne Campus of Australian Catholic University (ACU), the case study focuses on the development of PLNs by four current pre-service teachers. Two of these pre-service teachers will graduate at the end of 2010 and the remaining two will graduate at the end of 2011.

This case study arose in a local context from recent work completed by both academics and pre-service teachers at ACU in which digital portfolios and subsequently ePortfolios were developed as part of curriculum delivery and graduate attribute attainment. Feedback about this work identified a need for a dynamic element to be considered in which not only was the content of the portfolio made available but robust and meaningful cyber connections to the wider educational community made. The global relevance of this case study is evident in the current interest in ePortfolios and the recognised importance of lifelong learning, community and up skilling.

The aims of this case study are to create a personal knowledge platform that is dynamic and long lasting, to facilitate conversation and knowledge traffic within the educational community, to enhance online capabilities of pre-service and graduate teachers, and to promote participatory learning behaviours.

This case study and its subsequent findings will make an important contribution to the field of pre-service teacher education and graduate teacher welfare by enabling them to reap the rewards of a learning community that had been built both while studying and within the school workplace. Additionally this study will also identify the importance of drawing upon the expertise of in-service teachers and their wealth of knowledge.

## Biographies

### Adam Staples

Adam is the Visual Arts Education (Primary) lecturer at Australian Catholic University in Melbourne. Adam is currently researching his doctoral thesis entitled '*A language of the visual: identity, cross-cultural understanding and learning*' in which he is mapping how an effective visual arts education can permit a (re)interpretation of cultural agency, social agency and identity in students. Adam is also currently researching e-learning capabilities amongst pre-service teachers, with a particular focus on Web 2.0 technologies and self-directed learning. His work with Personal Learning Networks (PLN) is a part of this research.

### Laura Sanchez

Laura Sanchez is a 4th year Bachelor of Education (Primary) student at the Australian Catholic University in Melbourne. She is passionate about global education and has recently returned from a university funded volunteer placement in Honiara. Laura's love of global education has also taken her to the Guatemalan Quetzaltenango and once more to the Solomon Islands. Laura has undertaken numerous units of study at ACU to do with ICT and has recently completed an ePortfolio as an assessment for one of these units.



## Encountering ePortfolios, a mature aged student's perspective

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### Abstract

During semester two of tertiary study after a twenty-four year break I was asked to create an ePortfolio for an ITC assessment. I had no idea what an ePortfolio was or how it was presented. The ePortfolio tool itself was new as was the concept of writing reflectively about learning. Several over 45s in the course felt as I did, overwhelmed, struggling for a starting point, yet alone seeing the big picture.

I decided to return to my Certificate IV in Veterinary Nursing at Tafe this year. In trying to find and gather in one place nearly ten years of completed and half-finished work I returned to my PebblePad ePortfolio and began to fully understand the practical and reflective capabilities of ePortfolios.

Whilst uploading completed assessments and marks I realized the quality of my work and could see a picture of my learning development. It was with frustration that I realized much of my practical work had not been recorded, or was on a piece of paper... somewhere. I resolved to keep better records this year.

My teacher found it useful to read my work and the comments from previous assessments. It made sorting out what I had to complete an easier task. The ePortfolio has given me not only a holding site for my work but using it for study support gives me a private place for thoughts and a public platform to display my work and reflections.

I do not work in an orderly way, I butterfly between tasks and did not update my work regularly. I now have a weekly appointment booked in my Outlook calendar to update my ePortfolio.

The difference between my two experiences has been one of compulsory assessment as opposed to my need to use the ePortfolio for a practical purpose.

As a teacher I appreciate the difficulties with introducing ePortfolios for learning before using them as an assessment tool but as a student I believe ePortfolios need to be introduced separate to assessment purposes.

The idea of lifelong ePortfolios excites me. Students would learn from an early age to select their best work and reflect on it so that overtime these skills become an integral part of learning.

My ePortfolio will journey with me in my future learning.

## **Biography**

### **Sandra Stewart**

Sandra returned to tertiary study after a 24 year break to commence a Graduate Diploma in ICT Education. During that time she had worked as an ESL teacher, an English teacher in Botswana, K-6 teacher and later a casual teacher in the local area. She no longer works as a teacher. Sandra commenced Veterinary Nursing too long ago, holds a certificate II in Animal Attending and hopes to complete her Certificate IV in Veterinary Nursing this year. She has been accepted into a Master of Education to commence in 2012 when she plans to complete research into ePortfolios.

Her Case Study 'PebblePad from Friend to Foe' was presented at the PebblePad bash in Birmingham in 2010.

## The challenges of maintaining a professional midwifery ePortfolio in the cloud

**Sarah Stewart**

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### Abstract

In this case study I will present my experiences as a health professional and midwife in New Zealand as I use the 'cloud' to maintain a professional ePortfolio. Health professionals in Australia and New Zealand are required to maintain a professional portfolio as part of their statutory requirements. They are required to provide evidence about how they maintain their clinical competency, hours spent on professional development, maintenance of essential skills, clinical practice hours and reflection on their practice. For the majority of health professionals, this means a collection of paper in an A4 ring binder. However, I have chosen to maintain my portfolio in an electronic form in the 'cloud'. I reflect about my practice and my professional development in my blog (<http://sarah-stewart.blogspot.com>). I use YouTube, Blip.TV and SlideShare (<http://www.slideshare.net/sarabs>) to present my professional development activities. I collect information about what others think of my work in Delicious (<http://delicious.com/sarahmstewart/sarahstewart>). All these elements are coordinated and presented in my wiki: <http://sarahstewart-eportfolio.wikispaces.com>. I have chosen to take this open approach because I believe it allows me to be transparent to clients and colleagues, which in turn supports my accountability to the wider community. It also facilitates sharing and feedback which feeds into a continuous cycle of quality improvement. However, I am mindful of the issues of client/patient confidentiality and only reflect in very generic terms that cannot identify a particular person. This year I presented my ePortfolio at my bi-annual midwifery standards review which is an statutory audit process for New Zealand midwives. The two reviewers did not engage with the ePortfolio and requested that I present my material in traditional paper format. They cited poor Internet bandwidth and lack of time as reasons for this. On further discussion it became clear that they did not understand the concept of blogging or the fact that feedback comes from people other than midwives — that feedback comes from the community which adds to the richness of reflection. Nevertheless, they were very supportive of midwives using alternative and creative ways of presenting their audit material. Whilst I recognise that some health professionals will feel uncomfortable keeping their ePortfolios in the cloud, this is an option that should be explored and digital literacy support provided at individual and professional levels.

## Biography

### **Sarah Stewart**

Sarah Stewart is a nurse, midwife, educational developer, facilitator and consultant. Sarah works at the Educational Development Centre at Otago Polytechnic, Dunedin, New Zealand and is an educational consultant with her own company Ed-Bytes. Sarah has an international reputation as a result of her work in open education, social media and Second Life that focuses on professional development, life-long learning, mentoring and networking in health and education. Sarah is a passionate advocate of ePortfolios as a vehicle for teaching and learning, reflective practice and professional accreditation. She models what can be achieved in her own ePortfolio which she has developed on her open blog and wiki.

## Meeting the needs of students within an institutional Personal Development Planning (PDP) framework: piloting, informing, embedding and evaluating ePDP in a School of Arts, Media and Education (SAME) at a UK University — the PleR project

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### **Abstract**

The Dearing Report (2007) with its recommendation for the introduction of personal development planning (PDP) in Higher Education resulted in the University of Bolton developing a PDP framework (2005). Implemented through a validation process across all departments of the university this was later evaluated by Goodrich (2007) who highlighted problems and lack of engagement with the process. The recommendations from this report came at the point of reconfiguration from departments to schools and thus offered the opportunity to develop, within the newly formed School of Arts, Media and Education (SAME), an electronic PDP (ePDP) approach in line with its new e Strategy. This action research project, based on O'Brien's (1998) collaborative action research activity of practitioners wishing to improve their understanding of practice is underpinned by Cowan's (2006) diagram of reflection 'for' 'in' and 'on' moving from prior learning to further learning.

The culture of ePDP in the School of Arts, Media and Education at the University of Bolton, in the United Kingdom (UK), is slowly changing due to the greater involvement of students and staff with technology. The challenge is to ensure that the PDP concept is fully and holistically understood and embedded within the different discipline groups in the SAME and on the agreed Virtual Learning Environment (VLE) platform the university is progressing to. This research paper reflects on the results, challenges and evaluation of the pilot and two further years of implementation of an ePDP exercise in the SAME.

This paper reports on an action research project that aimed to facilitate and accommodate an institutional framework with particular attention to the Art & Design subject area. This discipline illustrates the specific needs required to fulfil the University of Bolton (UoB) Portfolio framework, recommending some adjustments with the support of current UoB technology and exploring good practice opportunities that could be mirrored in other AME disciplines.

We wish to acknowledge and thank Richard Ashley, John Washington and Sarah Lawton for their efforts in the pilot implementations of the e PDP approaches in the SAME.

## Introduction

In 1997 the Dearing Report recommended the introduction of Personal Development Planning (PDP) in Higher Education (HE) in the UK. HEI's were expected to introduce 'progress files' which would be used to record achievement and also '...monitor, build and reflect upon the personal development'. As a result UK HE moved toward the development of PDP approaches for students (Dearing, 1997). Subsequently at the University of Bolton a framework was developed (Burkinshaw, 2005) and this resulted in a validation process to embed PDP within modules.

**Table 1:** UoB PDP Framework 2005

Levels (*) (**)			
HE 1	HE 2	HE 3	HE 4
Compile a record	Select and justify evidence	Evaluate appropriateness of materials	Make informed judgements
Identify own strengths	Evaluate own strengths & weaknesses (from evidence)	Evaluate own strengths & weaknesses (from evidence, career plans and work)	Evaluate factors
Reflect on effectiveness	Reflect on and review effectiveness	Reflect on and appraise	Reflect on, and during own performance, appraise
Identify own needs	Review and prioritise	Evaluate own effectiveness. Set targets	Evaluate own effectiveness. Revise targets
Plan action	Review action plans	Evaluate the effectiveness	Evaluate the effectiveness and implement

(\*) Levels based on 'credit and HE Qualifications' guidelines (2001, November)

(\*\*) Table content has been summarise from the original

Key features of the framework were its student focused activities around a structured on-going process involving - reviewing, reflecting, action planning, target setting and monitoring. PDP was intended to be embedded within curricula at each level of study and different modes of learning (including external to the university). Students were to be encouraged to reflect on their learning and career development holistically. The framework identified the use of technology to support the UoB PDP approach. It also recognised that the potential application of technology in student PDP (Virtual learning Platform - WebCT) had resulted in issues such as poor interoperability with Apple Mac computers which are the preferred platform for Art and Design students (who are the main focus of this project), and which prevented progress at that time.

## *PDP in the SAME*

The departmental structure in place when the UoB PDP Framework was introduced resulted in a range of approaches to its implementation within the different disciplines of Art & Design, Cultural and Creative Studies and Education who make



up the School of Arts, Media and Education. The decision to implement an on-line approach offered a useful opportunity to see how PDP in an 'e' context would work across the breadth of programmes in these subject areas within the newly formed SAME.

Within the Cultural and Creative subject areas and Education Studies PDP was embedded in individual modules ranging across the HE4 – 6 levels (the three years of undergraduate study in the UK) of the Framework for Higher Education Qualifications (FHEQ) in the UK.

In Art and Design PDP was embedded within a core HE4 (first year of undergraduate study) module (Critical Studies 1). Particular problems associated with the Art and Design module arose as a result of PDP being defined as a learning outcome but carrying no assessment weighting. Students found this difficult to manage as they did not want to engage with a non-credit bearing learning outcome of a module. Little evaluation of the effectiveness of PDP was available until a report commissioned by the University (Goodrich, 2007) highlighted problems and some lack of engagement with the PDP process.

The Goodrich (2007) report stated that there was a need to '*revisit and review the implementation of PDP studying at the University of Bolton*'. To build on good practice in the report a recommendation was made that PDP should be foregrounded in Learning and Teaching and that this would '*involve investment in resources of staffing and staff time for both academic and academic professional services*'. The (PIeR) project emerged as one specific response to this report and to accommodate the UoB framework in a positive way. The decision to develop and implement an e approach is predicated on the SAME 'e strategy's' reference to implementing technologies in all school processes.

As indicated earlier, PDP in the SAME is located differently within the discrete subject areas. Within Cultural and Creative studies PDP was embedded in a range of modules representing Media Writing and Production, Creative Writing, Film and Media Studies, English and History. Similarly PDP was embedded in different modules in Education Studies. As all Art & Design students were involved in undertaking the same module (Critical Studies 1), this provided the largest control groups to develop, implement and evaluate this ePDP project. Thus it was possible to do an intervention in Art and Design, the results of which would inform the other subject groups and the wider university community. This was also possible because of the embedding of PDP in a core HE4 module which included the development of research and study skills.

Electronic based initiatives have been implemented through the use of the Institute for Learning (IFL) Reflect Portfolio process in Teacher Training (TT) as this is an external requirement which removed this group of students from the ePDP development.

It was hoped that this ePDP initiative would help to embed an e-learning approach across the SAME, which would inform and support students as they moved into levels HE5 and 6 study. This also acknowledged the University goal of a blended learning ethos. Piloting with Art and Design students included a professional skills element as this approach would support their longer term capacity to understand, develop and use on-line portfolios aligned to opportunities for future employability through developing a holistic understanding of the flexibility of an e PDP initiative

as part of portfolio building and the ability to demonstrate transferable skills within this. Managing an online identity is becoming increasingly important in developing the professional skills needed to meet sector demands and skills. This project was one approach in justifying the exploring of ePDP as a tool to develop those skills with students.

Based on the University of Bolton's generic PDP framework around a table of development activity against skills, knowledge and understanding (Table 1) This had previously been simplified in Art and Design in 2006 as students had found the text based approach less helpful to their creative practice and it was agreed that the revised table (Table 2) would be used by all students involved in the pilot as a basis for evaluation and to create links to external websites and blogs which the students are able to do within the table by providing hyperlinks to their own websites and work in progress. This was particularly important in a subject area which traditionally uses the visual as a means of communicating skills, knowledge and understanding.

**Table 2:** The SAME PDP Table

To develop:	Skills	Knowledge	Experience
<b>Reflection:</b> Decide on areas you need to develop	a1	a2	a3
<b>Planning:</b> Identify urgent and longer term needs	b1	b2	b3
<b>Action:</b> Using feedback to turn planning into action	c1	c2	c3
<b>Review:</b> Progress	d1	d2	d3

*(adapted from the University of Bolton PDP framework 2005)*

## Literature review

This literature review deals with two strands of research relevant to this field, PDP research, including the use of technology in PDP activity, and the research design itself. Much has been written about PDP including the work of Clegg and Bradley (2006) on practice and process in models of PDP, Ward and Jackson (eds , 2001) Personal Development Planning through Institutional Case Studies. James (2004) looked at the tensions between the role of PDP and whether it enhances individual understanding in a creative arts environment. Whilst recognising the importance of this research, we have concentrated on reporting from a blend of findings from both Art and Design and generic literature around ePDP.

### PDP research

There is a growing body of evidence around the use of ePDP and ePortfolios and Logan (2007) highlighted the enhancement through digital portfolios, demonstrating subject expertise, skills and experience, of the student's employment prospects through a digital approach. Concerns were expressed by respondents in Logan's research about the loss of the '*sense-based understanding*' in digital

portfolios . This was prevalent in for e.g. textile design. Logan informs us that Art, Design and Media (ADM) stakeholders saw the e Portfolio as an opportunity to develop wider communication about students and their development in a broader global environment. The Portolano project <http://www.eportolano.eu/index.html> is one example of an online community network which produced a professional guide to develop competency in the creative arts through the use of (e)Portfolios.

The findings of the University of Nottingham's e Portfolio development team highlight in their early results and recommendations that we should '*consider how student prefer to work (e.g. using technologies such as mobile technology, web 2.0) when thinking about the best way for them to carry out e Portfolio related learning activities*' and to '*embed e Portfolio learning activities into lesson plans and curriculum (ePortfolios, 2009)*'. Thus the embedding of technology through has been a key factor in the development of the project because of the strategic need to develop e learning in SAME.

Beetham (2008) highlights that '*learning activity is a specific interaction of learners with others, using specific tools and resources, oriented towards specific outcomes*' and if we link this to practice in a digital age then arguably communication and social interaction are linked to the way learners in the world of work may collaborate with others, then the use of web2.0 technologies can be seen as one way of sharing knowledge building, networking and exchanging ideas. This may however, in the context of Learning Outcomes be, by default, planned as the development of evaluation, reflection and critical thinking skills through (e)PDP are in-built into validated modules.

The case studies undertaken by the JISC Technology Enhanced Learning project (2009) evidenced little difficulty accessing the technology (which replicates the PIeR findings) but did find that the rationale for using activities that were appropriately scaffolded to demonstrate their value was important (the UOB PDP framework being the scaffold for this project) and that the key to meeting and supporting student learning needs is the '*pedagogy of planning tools*'.

The Australian e Portfolio (AeP) final report (2008) specifically references the four principal JISC purposes of e Portfolios and the PIeR project links primarily with the fourth area:

*Supporting personal development planning (PDP) and continuous professional development (CPD)*

- *Providing scaffolding to support lifelong learners in reflecting on their current and completed learning, achievements and achievements and experiences, and on goals and opportunities, to guide learning (formal and informal) and professional development over time.*

Key issues were identified by Drew et al (2007) on how e PDP is embedded in programmes and how this relates to the processes of action planning and reflection which occurs commonly in art, design and media. They highlight the importance of developing students' e skills and their findings show that students based in these subject areas are more positive about e PDP overall.

Malins (2003) found a direct relevance of PDP in '*a studio based context*' and, in evaluating the distinctive approach used, showed that '*providing an appropriate*

structure for assessment and reflection can support students in being more active and deeply engaged with this process’.

While the PIeR research is predicated on the requirement that students undertake ePDP, we must clarify here that ePDP may also be defined as part of a broader e Portfolio in any future development. Barrett (2010) makes a distinction between the process and product aspect of the portfolio:

*(The) difference between the portfolio as **process** (collection, selection, reflection, direction, presentation) and the portfolio as **product** (the notebook, the website, the CD\_ROM or the DVD and the technological tools used to create the portfolio-as –product).*

can be clearly matched to the ePDP process implemented in the SAME where students are often replicating what they previously managed in paper format and have now translated into an on-line resource through process resulting in product. The understanding of what can constitute an e Portfolio is similarly described in the national audit of the AeP (p71) this is comparable to what could constitute an ePDP in the SAME if students use the framework as it had been originally designed and further developed in the school.

### Research design

This project developed as a collaborative action research activity where the participants are co-researchers; an approach often applied in real situations and by practitioners wishing to improve their understanding of practice (O’Brien, 1998). Thus the project developed as a result of a particular strategic need within the university and SAME to develop the use of e learning more widely in the school.

Cowan (2006, p. 52) references the circling of the Kolb experiential cycle from suggested literature as ‘depressing or misleading’. This led to the development of the Cowan diagram (2006, Figure 4.5, p. 53) which is viewed as a key tool in managing this research in context.

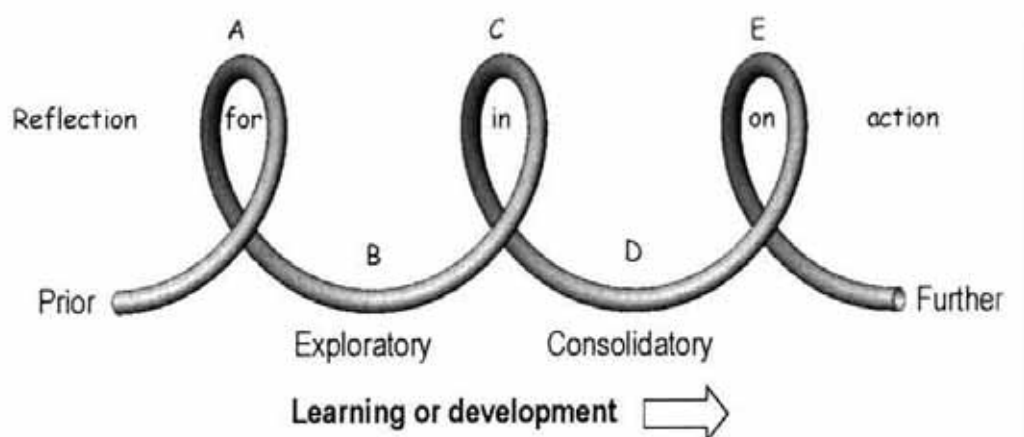
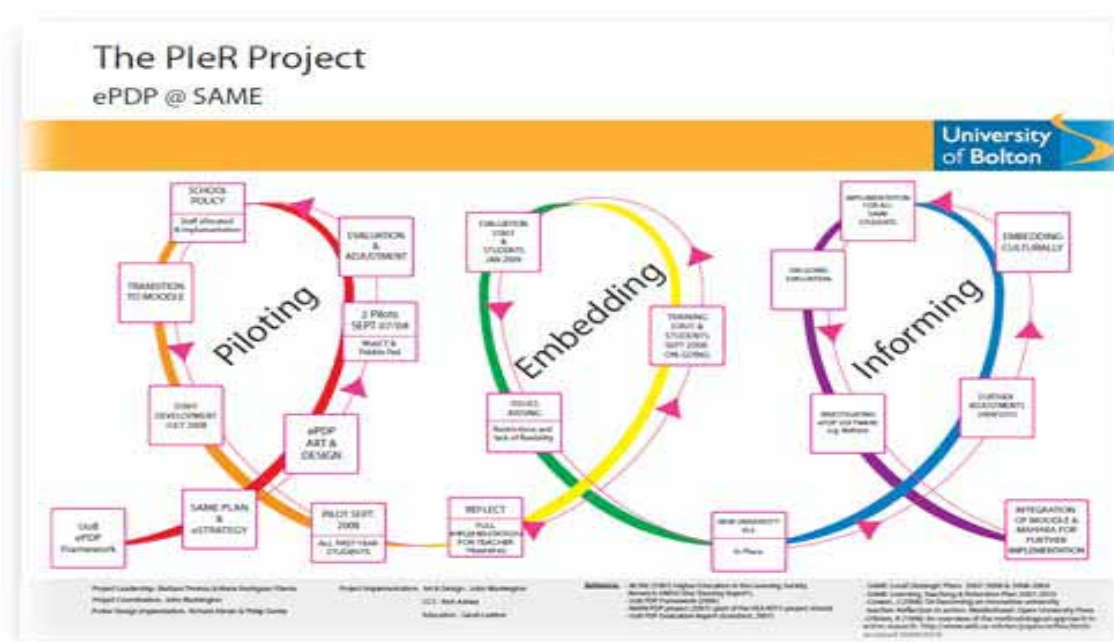


Figure 1: The Cowan Diagram

This diagram embeds reflection 'for, in and on' action whilst moving from prior learning through exploration and consolidation to further learning thus adopting a Schönian approach combined with the features of Kolb in a horizontal helix. This methodology is particularly reflective of the learning process in creative subjects where learning may not always go in a continuous circle but go back and forwards within the reflective loops and is indicative of the cyclical action research model developed by Kemmis (from MacIsaac, 1995) where there are four steps – plan, act, observe and reflect. This can be clearly seen in the development of the interactive poster where the piloting, informing and embedding follow the reflection 'for, in and on' based on prior knowledge, exploration, consolidation and further action.



**Figure 2:** Interactive Poster adapted from Cowan's diagram

### *ePDP in art and design — issues and constraints*

The long standing model of the visual journal in Art and Design led to some tensions from embedding PDP within it and in particular through using an 'e' approach. The clash of cultural language with a set framework of 'plan', 'do' and 'review' does not sit well with ideas generation in an open ended, creative, organic development through the visual journal. PDP as reflective practice has been central to learning in Art and Design for many years. Whilst often informal and often oral, once PDP was formalised through national policy, many staff resisted the top-down approach whilst failing to recognise the good practice generated by their own sector.

The 'e' tools previously used (WebCT and Web2.0), were also less flexible than had been anticipated for this visual environment given the lack of a relationship from the drawn image to the original university framework. This may however have been an initial problem with staff who, in some cases, did not identify with the use of the technology for this particular aspect of the student experience. On the other hand students' perceptions, knowledge and use of e learning is primarily based in a visual context and experience in Art and Design. It is useful to note that many institutions now ask for e portfolios of work prior to interview and shortlisting for



undergraduate and postgraduate courses and it is essential that UoB students are equally prepared for future progression or employment in a highly competitive market.

It is important that for acceptance a PDP process recognises and is sensitive to the range of tacit, embodied and sensory forms of knowledge commonly situated within Art and Design.

Students, studying the selected module (Critical Studies 1) in Art and Design were consulted and were willing to engage in the project. The Interactive Poster (viewable in the PIeR online blog at: <http://pierproject.edublogs.org/>) describes the process using Cowans' (2006) reflective diagram to underpin the action research approach (Kemmis, from MacIsaac, 1995).

Following the initial pilot based on student feedback and tutor findings and using an action research approach the project has engaged with, and foregrounded through a table of development activities against skills, knowledge and experience. Students were able to use the revised SAME framework to create links from within the table, to external websites, blogs and other online communication tools.

The following table (table 3 below) presents an overall view of the ePDP project in the SAME and is followed by a commentary of the different phases of the project and the process of the SAME ePDP initiative.

**Table 3:** SAME ePDP Initiative

Pilot	Summary of ePDP pilot initiative			
	2007	2008	2009	2010
VLE	WebCT	Moodle	Moodle (upgrade)	Integration Moodle/Mahara
Student group	A&D Education	Art & Design Education Media	Art & Design Education Media Creative Writing Foundation Degree	Art & Design Education Media Creative Writing Foundation Degree
PDP Table	Original & adjusted	Adjusted table	Adjusted table	Interactive table
Key activities	<ul style="list-style-type: none"> <li>Staff development</li> <li>Student's training</li> <li>Test WebCT</li> <li>Table adjustment</li> <li>Pilots</li> <li>Usability and accessibility Adjustments</li> </ul>	<ul style="list-style-type: none"> <li>Test WebCT</li> <li>transition to Moodle</li> <li>Adjust Moodle ePDP structure to feedback</li> <li>New staff &amp; student training</li> </ul>	<ul style="list-style-type: none"> <li>Test Moodle</li> <li>transition update</li> <li>Adjust Moodle ePDP structure to feedback</li> <li>staff &amp; student development</li> <li>Reflections on concept of 'PDP'</li> </ul>	Test Moodle and Mahara software integration — In progress

The first pilot was organised in the academic year 2007-2008, using the UoB VLE at the time (WebCT). Staff development was delivered for the coordinator of the pilot, who delivered the other staff and students training (2 members of staff, approximately 120 students). After 4 weeks, students and staff were surveyed to gather feedback from their initial experience of using the resource. Minor



adjustments were made based on their initial recommendations (location of displayed table, and minor navigation issues). At the end of the semester another survey was sent, and this provided evaluative feedback to inform the next stage of piloting.

60% of the comments from the end of semester feedback survey highlighted the poor flexibility and interactivity of the VLE in comparison with some other free online resources (e.g. EDUBLOG, WordPress, and alike) for those students and staff that have used such online free tools. Some students (20%) were reluctant to use ePDP/PDP, while it was validated and articulated as a separate Learning Outcome in modules. Students consider it 'irrelevant' since it *'didn't carry a mark'*.

The feedback set a benchmark and challenges for the second pilot which used an Open Source VLE (Moodle), which was expected to have a more flexible, friendly interface, interactivity and ease of use. After running the second pilot (academic year 2008-2009), with 150 students, using the new UoB VLE, preliminary outcomes from a feedback survey showed that while Moodle resulted in a more flexible VLE for ePDP, cross platform and cross browser issues were still apparent particularly the compatibility with Apple Mac's used in Art & Design (40% of AME students and staff use Apple's platforms). Some students (35%) still complained about the usefulness of the SAME PDP table (table 2), which they found *'restrictive and sometimes confusing'* as a tool to promote true reflection and this compared with some staff concerns about the same issues. This led to belief that both, students and staff require more holistic support for understanding and applying PDP within the school, despite the technology and a more flexible approach to the use of the existing PDP framework to cater for the diverse range of disciplines in the SAME.

The third pilot (2009–2010), involving 180 undergraduate students completed ePDP training using the newly upgraded VLE and with an extra induction on PDP concepts and importance. A feedback carried out at the end of semester 1 showed that a vast majority of students (85%) engaged with the new technology and did not miss the old paper-based PDP.

In addition, new tutors have been more open to the use of the VLE platform due to leadership in the SAME on eLearning and T&L. Combined efforts to disseminate good practice examples and collaborative support via meetings, committees, the school website and staff development events have kept ePDP on the SAME agenda. Some tutors have volunteered to get additional training and test the resource in their modules. Familiarity with the system makes it much more accessible for many tutors (a series of promotional training sessions about the new VLE and the integration of the ePDP within in it, was organised for the two semesters). Tutors' feedback (3 out of 5 qualitative comments on feedback surveys) continues to request greater flexibility in the way the work is completed (more interactive PDP table), however, current University ICT support resources limit any further development on this.

The key issues raised by the students and academic staff involved in this last piloting include:

**(i) The ePDP Form**

In all sessions the layout/structure of the ePDP form (table 2) was the subject of debate: the students found it difficult to understand and many said it was confusing, with misleading headings. In discussion the students thought it would be better if the headings were clearer and not formatted into a table,

making it more flexible, open and/or interactive. Essentially, this is largely an issue that has to be considered within the scope of what is currently available in Moodle. A new software integration is emerging (Moodle and Mahara), and the SAME eTeam is exploring the possibility of implementing ePDP using Mahara (a bespoke ePDP resource that could solve issues of interactivity, privacy and communication within the VLE) once it has been fully integrated with Moodle in the University.

**(ii) Privacy**

There was minimal feedback in relation to Moodle's blog privacy settings: most students were happy to publish their entries and make them available to their peers (using the 'public' feature available in Moodle) and this was in contrast to the cohort of 2008/9 when a greater number of students were unhappy with the notion of making their thoughts public. It is believed that the extra induction on the holistic concept underpinning PDP, mentioned earlier, made them aware of the potential impact of using this facility to enhance their learning experience.

**(iii) Mature students**

The drop-in IT training sessions were mainly attended by mature students who had little or no experience of using computers. One to one sessions were arranged for a small number of individuals therefore ensuring that students who had particularly poor IT skills could complete the ePDP.

**(iv) Monitoring participation**

The students individual blogs were regularly monitored to ensure that they were complying with the assessment criteria. It is however difficult to accurately assess how individual students were progressing because a large proportion of students may have been recording information in another format in order to paste into Moodle at a later date.

**(v) Extending the ePDP**

Very few students appear to have taken the ePDP further, by for example adding text entries; external links; personal images, etc, after the end of the academic year. 30% of students commented in the feedback surveys on the editing features of Moodle being quite daunting for those unfamiliar with web based formatting.

*Strengths and opportunities for improvement in ePDP — learning from each implementation?*

In general, students' ePDP had identified areas in which they felt the need to improve and, taking cues from the module content and assignment briefs, they articulated ways in which they could improve their own performance in terms of deeper research, better time management and checking progress with teaching staff.

These findings give insights into the impact of the teaching and learning methods used which, in this recorded instance, were designed to help visually orientated students to acquire research skills and engage with a written assignment with confidence and a degree of independence. Thus, the information obtained via this kind of qualitative response is useful, not only in evaluating the particular module in which ePDP was embedded but has also demonstrated a broader potential for ePDP in future.

Overall, the ePDP training sessions and pilots were successful; however, future continuous evaluative feedback from the module tutors and students should provide a richer measure of its success. The upgraded Moodle system made the ePDP a more efficient task, however some issues prevailed (lack of full table interactivity, flexible resources, and privacy of entries), and this is the main reason why it is imperative to carry on testing better software available, reliable, UoB supported and efficient (i.e. Mahara) to ensure quality in the teaching and learning experience in the School.

Whilst staff feedback has not been a formal part of the evaluation, anecdotal evidence from (one) staff member implementing ePDP described security as '*too high – students can't input without lowering security but can view existing work*'.

Another member of staff had identified ePDP as an additional module evaluation tool in the way students had used ePDP as part of their learning experience:

*When considering the ePDP obtained from the level 1(HE4) discipline X students in 2009/10 ePDP appears to be effective as a means to ascertain the efficacy of the teaching and learning methods employed along with the students' assessment of their own performance within a module and their perceptions of their learning needs. This stands in contrast to the student evaluation forms that encourage a very broad evaluative approach reliant upon judgements of the performance of the tutor rather than, as in the case of ePDP a detailed, reflective, student-centred personal response.*

Staff involved in implementing ePDP reported the training for students (and staff) was largely successful and reflected in the number of staff/students who engaged with ePDP during this development period. In general, students had identified areas in which they felt the need to improve and, taking cues from the module content and assignment briefs, they articulated ways in which they could improve their own performance in terms of deeper research, better time management and checking progress with teaching staff and evidenced in their on-line PDP.

The ePDP experience to date is based on an approach to embed the ePDP system and to gain understanding across the SAME. This has demonstrated that it is possible to develop a bespoke learning experience through ePDP enabling appropriate and considered approaches to ePDP to meet the diverse needs of the SAME student population and to ensure that we are innovating within the constantly changing technologies.

There is clearly a need to understand the extent of PDP within curriculum and adapting it to continuously changing new technology. In a mixed economy school, with a rich and diverse range of subjects, the appropriateness of the approach chosen within the current inflexibility of the PDP framework (and ensuring security of the virtual space for students) are a major consideration for future and on-going implementation.

Continuing to manage this for students will be key to their collective and individual 'buy in'. Evaluation to date has shown that 'e' itself is not an issue, rather the purpose of PDP within their overarching student experience of HE. Staff and students demonstrated positive engagement with the project developments and as a result demanded more from the technology at each stage.

While the PIeR project was primarily about students, staff development has occurred implicitly in the implementation and supporting of students with ePDP. While requiring students to reflect on their learning etc. through the ePDP process we could expect but not assume that staff are also reflecting critically on their learning. The transition from the UoB framework to a flexible, fit for purpose ePDP will demand a more critical and reflective approach from staff and students enabling personal ownership and identity of the outcomes.

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## **Biographies**

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## The use of video portfolios as subset capability of the greater student ePortfolio

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**William Tree     Richard Ross**

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### Abstract

Video and rich media technologies provide learners and educators alike with an array of possibilities to impart knowledge, capture skill acquisition evidence and to showcase talents or interests. It is now possible to 'plug-in' a streaming and data sharing capability to augment existing networked ePortfolios employed by organizations. The ability for learners and educators alike to easily record, annotate and share such digital assets as part of the greater organizational ePortfolio is realizing critical success particularly for those accessing these learning spaces from rural and remote communities. EDUPOV presents in these series of case studies the development and applied use of:

- Video & live streaming applications developed to integrate with proprietor and open source ePortfolio platforms
- The use of video portfolios applications in trades related settings
- The integration of video portfolio digital assets responsive learning and assessment practices
- These case studies will highlight the cognitive associations that educators have made to incorporate rich media as a valued attribute in learning & teaching process of learner engagement, where user autonomy and mobile transportability of learner material is now expected.

These case studies will also divulge the technical, quality, accessibility and cost related challenges facing organizations employing rich media enhanced capabilities as part of learning management.



## **Biographies**

### **Guy Truss**

Guy and other lecturers have engaged with a streamfolio v-portfolio to examine its usability to aggregate video based evidence from remote students for assessment

### **William Tree**

Lidcombe TAFE Floor Covering have instigated a trial to engage students with a Streamfolio v-portfolio to capture and aggregate video based evidence of a student's competence in a workplace.

### **Richard Ross**

Richard has engaged with streamfolio with a select student group to generate video based training aids for inclusion in their learning programs.

### **Val Evans**

CCCC have engaged with an AFLF project using mahoodle and streamfolio v-portfolio to enable students to aggregate video evidence for inclusion in their assessment processes.

### **Dianne Wallace**

DA have purchased a streamfolio license for inclusion in their e-learning suite to aggregate both student and lecturer generated video for training and assessment.

## The iPortfolio: a tool for work integrated learning for health promotion students

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### Abstract

This poster reports on the use of an electronic portfolio called the iPortfolio in a final year undergraduate health promotion subject. The unit gives students a fieldwork experience and learning tasks to contribute to their work readiness. In the past, this was achieved through students' written assessment of a resume, job application and completion of a 100 hour field work placement. With the introduction of the iPortfolio, students reflect over the whole three-year course, not just a single unit or work placement, and consolidate evidence to support reflections on attainment of graduate competencies.

The use of the iPortfolio resulted in several successes and benefits. These included:

- Students were able to take a holistic and personal view to tie together learning and development as an emerging health promotion professional.
- IPortfolio provided students a user-friendly environment to illustrate competencies through a range of different mediums, e.g. photographs, written work, videos, and documents.
- The process of enabling reflection in an electronic format potentially better prepares students for presentation and interviews with prospective employers.
- The About Me tab includes a section for biographical information and goals. This is a clarifying exercise for the students, but also gives academics insights about their students' backgrounds, motivation and goals that were not previously readily accessible.
- The My Ratings tab gives a snapshot regarding student perceptions of graduate attribute competency attainment for an entire cohort. This captures student perceptions on their developing Curtin University graduate competencies, and enables the teaching team to consider opportunities for course refinement.

Several challenges also arose. These included:

- The need to develop IT literacy skills to a minimum standard.

- There were moderation challenges for academic staff. As a new form of assessment, existing marking rubrics did not capture what was presented and the iPortfolio did not easily interface into existing grade systems such as used via BlackBoard.

In the future, the iPortfolio is to be integrated and used across the whole three years of learning in the undergraduate degree to truly capture the cumulative skill development of health promotion students. Moderation will also utilise iPortfolio social networking features to assist students in providing meaningful feedback to their peers.

The iPortfolio has the potential to provide health promotion students with a unique tool to reflect on their university learning and at the same time provide focus and skills to successfully enter the workforce and valuable insight for teaching staff.

## **Biographies**

### **Brian von Konsky**

Brian von Konsky PhD(Curtin) FACS CP is a Senior Lecturer at Curtin University. He is currently seconded to the Office of Assessment, Teaching and Learning where he is responsible for the roll-out of Curtin's University-wide ePortfolio system. Dr von Konsky was elected a Fellow of the Australian Computer Society (ACS) in recognition of his contribution to computing and software engineering education. He is the Associate Director of the ACS Professional Standards Board (PSB) where he has taken a leadership role in defining the ACS Core Body of Knowledge. His research interests include software engineering and computing education, with an emphasis on the development of professional skills like leadership, teamwork, and project management. He is also interested in mobile technologies that support eLearning and collaboration. His work draws on previous experience as Course Coordinator of the Bachelors of Engineering and Science in Software Engineering programs. He has extensive experience in the ICT industry that includes nine years as an employee of Hewlett-Packard.

### **Jude Comfort**

Jude Comfort is a lecturer and researcher in the School of Public Health at Curtin University. She has a teaching focus in work integrated learning as it applies to health promotion students. Her research interests include the health of diverse sexualities and gendered communities. She is currently completing her PhD on lesbian smoking. She has a long background in public health practice and advocacy particularly in cancer control.

## From Pets to Pebblepad — using ePortfolios to assess workplace learning in Veterinary Nursing

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### Abstract

2010 sees Victoria University (VU) with the **first** group of **full time** students completing Certificate IV in Veterinary Nursing. This inaugural group are completing their study in a fully operational veterinary clinic at VU, as well as participating in industry placement in order to enhance employability skills to achieve work readiness. Workplace experiences are vital for students in developing their competence and confidence in veterinary nursing skills. The challenge for us as educators is how we can ensure assessment practices engage and motivate the learner, but meet training and industry requirements.

In semester 2 students will undertake a webfolio assessment task. The completed webfolio will showcase a rich collection of learning experiences, including an action plan outlining semester goals; a blog of Workplacement reflections; clinic newsletter developed using a wiki and career documents such as resume and employability skills. Students will be able to include digital examples of workplace learning, such as videos of techniques learnt, or podcasts of product explanations to customers.

Students will present their webfolio in October, as a way of celebrating their learning and sharing their experiences. Feedback will be sought from their peers, teachers and industry contacts.

We have chosen Pebblepad as the system for ePortfolio development. Pebblepad suits the needs of our learners, in that it is easy to use, visually appealing and provides flexibility for both the teacher and the learner. To prepare students for this assessment task, they have been given the opportunity to practice navigating Pebblepad in order to familiarise themselves with the features and applications.

The poster will provide examples of student webfolios, student experiences of using e-learning for assessment; and VU staff and industry responses.

### Biography

#### **Kaye Widdowson**

Kaye Widdowson currently works in the School of Sport and Science at Victoria University, as a trainer in communications. She has been using WebCT and Pebblepad in the classroom for the past 5 years. Kaye is always looking for ways to integrate e-learning into program delivery to enhance student learning experiences.

## Can ePortfolios assist university students' work integrated learning? Exploring professional competencies in Nursing and Construction Management

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### **Abstract**

E-learning has increasingly come to the fore as a means to enhance students' learning, and in particular, learning in the work place. Relevant professional bodies require Nursing and Construction Management (CM) university students to engage in practical/clinical placement experiences as part of their required activities. This paper explores whether ePortfolios have a significant role to play in demonstrating and improving students' skills learnt from these practical placements in relation to their undergraduate studies.

A recently awarded Australian Learning and Teaching Council project entitled 'Facilitating work integrated learning through skills-enabled e-portfolios in the CM and Nursing disciplines' conducted at the University of Newcastle investigates students' work-based learning and assessment within the two disciplines. The project's main aim is to develop a learning framework that will showcase to students how their university courses relate to each other and how the skills and competencies they acquire on campus and during their work-based experiences are integrated to enable them to graduate as qualified professionals in their discipline. A component of the project aims to explore whether ePortfolio platforms and e-learning technologies can both facilitate and support students' learning engagement with their work integrated learning through the demonstration of these skills.

Derived from the outcomes of the project's initial phase, this paper presents the development of a learning framework that encourages reflective learning during work-based activities. It then sets out to explain how this framework can be linked to the use of ePortfolios. The process of creating the framework has so far involved an analysis of competencies from different accreditation bodies resulting in a hierarchy of skill sets within these competencies. It then analyses how different ePortfolios platforms could be used as a reflective online tool for students to help them link the knowledge learnt from their placement practices with the theoretical concepts learnt at university

(Levett-Jones, Fahey, Parsons, & Mitchell, 2006). Consequently, students could use their ePortfolio after graduating to demonstrate the practical experiences they have gained during their degree which would contribute to improving their professional skills in their respective fields. Further literature on students' use of ePortfolios will be taken into account to demonstrate students own views of using ePortfolios for work based learning.

In conclusion, the paper will examine how work based competencies can be documented and demonstrated through ePortfolios to enhance students work integrated learning.

**Keywords:** *ePortfolio platforms, learning framework, work based learning, Construction disciplines, nursing, professional skills.*

## Introduction

This paper presents preliminary outcomes of an Australian Learning and Teaching Council (ALTC) grant to investigate WIL and the use of ePortfolios. The grant was recently awarded to the University of Newcastle to fund a study in the disciplines of Construction Management (CM) and Nursing. The project aims to make explicit connections between what is taught at university and students' learning in the workplace. On completion the project will generate a design brief and specification for a student competency resource on standards/skills for CM and nursing. This resource will be readily transferable to other disciplines. Furthermore, final project reports will document the potential for ePortfolios to enhance industry practices and related theory. A final outcome will be online packages which provide teaching resources to support academics in engaging /incorporating WIL in their lessons. Initially, a hierarchical framework of skills statements that map the competency requirements of relevant professional bodies to the learning outcomes of relevant undergraduate programs has been created to promote these connections. This paper discusses the development of these skills statements. It describes a framework that enables nursing and CM students to connect theory and practice. It then explores the opportunities that Web 2.0 environments provide in this context. Web 2.0 tools enable student-centred approaches to learning and may be supported through ePortfolio platforms (which will also be reviewed within the context of WIL). This project is still in its qualitative data gathering stage, therefore only relevant literature on using ePortfolios for WIL and students' views of using these platforms will be considered.

## Background to the project

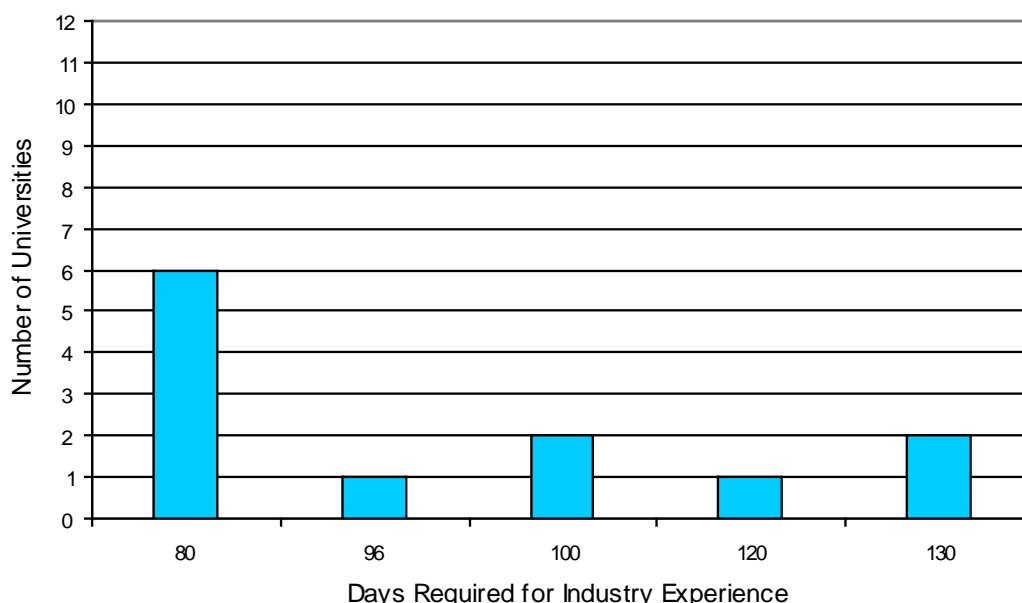
### *Rationale*

In Australia, the principal method of developing nursing and CM competencies is through work placement experience. CM and nursing curricula are compliance and accreditation driven. It is therefore vital that workplace requirements are integrated with curricula. The bodies (Australian Institute of Building, Australian Institute of Quantity Surveyors, and Australian Institute of Building Surveyors) that accredit CM require students to engage in at least 520 hours (80 days) of industrial placement (AIB, AIBS, & AIQS, 2008). In comparison in the Nursing disciplines, which has one body, the Australian Nursing and Midwifery Council (ANMC, 2005) has proposed that generally between 800 and 1200 clinical placement hours are required



(Levett-Jones, Lathlean, McMillan, & Higgins, 2008). Self-assessment in nursing, is predominately through reflective portfolios, and is one of the methods used to assess the competence of individual nursing practitioners and this is implemented within a quality improvement framework (Levett-Jones et al., 2006). On the other hand, in CM, reflective practice is embedded in the professional development practices prescribed by the professional bodies (AIB et al., 2008).

At the moment the professional bodies that accredit CM do not prescribe quality control mechanisms for WIL. Individual universities interpret, administer and monitor WIL in accordance with their own policies (Williams, Sher, & Simmons, 2009). For instance, Figure 1 shows how the Universities who offer CM degrees require varied numbers of days for student to be on industry placement.



**Figure 1:** Industrial experience required by universities who offer CM (Feb 2008) (Williams et al., 2009). (Source: University websites, program guides)

The outcomes of the research project will identify opportunities for encouraging and facilitating skill development and evidence gathering during work placement and subsequent employment, in line with lifelong learning practices in both the CM and Nursing disciplines.

### *Managing WIL in Higher Education*

WIL is the term which describes educational activities that integrate theoretical learning with its application in a workplace, profession, career or future employment (Billett, 2001; Patrick, 2009). It is currently popular in Australia and attempts are being made to deliver WIL as part of a broad range of undergraduate programs. WIL activities may be conducted off or on campus. Depending on the discipline area they may be real or simulated and should involve clearly stated outcomes, be explicitly assessed and be delivered through processes that are consistent with quality teaching and learning (Billett, 2001; Billett, 2009). The benefits of WIL are well recognised and have recently been documented in 'the first large-scale scoping study of work integrated learning (WIL) in contemporary Australian higher education' (Patrick, 2009, p. v). A recent report researching issues and opportunities in

construction education in Australia (Williams et al., 2009) similarly indicated that CM students in particular recognise and appreciate the benefits of WIL activities during their studies. In particular, students identified teamwork and being given responsibility as activities that encouraged them to learn and apply knowledge to practice (Williams et al., 2009). The report also found that CM students who complete WIL activities are generally motivated in the work force by their on campus experiences. In the Engineering disciplines, WIL has also been identified as making students more aware of complexities related to professional practice and that students need these opportunities to ground their conceptual knowledge in the real world (Mills & Treagust, 2003; Richardson, Kaider, Henschke, & Jackling, 2009). It is thus important for students to be afforded opportunities to engage in WIL during their studies.

Other studies in engineering have highlighted concerns about the linkages made between programs, industry experience and assessment. Engineering graduates need strong communication and teamwork skills, but these are generally not well developed (BIHECC, 2007). Currently, engineering students graduate with a sound knowledge of fundamental engineering science and computer literacy, but they find these challenging to apply in practice (Mills & Treagust, 2003). Similarly, Richardson et al. (2009) discuss the issues of assessing work integrated learning in engineering programs due to the different way students learn when they are on placement, such as learning informally or sporadically.

On the other hand, unlike CM and Engineering, Australian universities who offer Nursing have varied ways to manage and assess nursing students' clinical placements (also termed clinical practicum). At most universities Australia wide, students have periods of placement each year of their program. To encourage the learning on placements, universities use a range of assessment processes, such as mentorships with Registered Nurses, clinical progression portfolios whilst on placement and the use of labs to trial out skills before going on placement. Unlike CM, a necessary component for clinical placements required by the professional body, the ANMC, are 'portfolio requirements' which are 'collections of evidence that can be used to reveal and stimulate learning and/or provide an argument of competence or performance (Andre & Heartfield, 2007, as cited in Andre, 2010 p. 2). For instance, the 'clinical progression portfolio' is (a recent initiative from a University in Queensland) also provides students with 'room to reflect on what they have learnt each day' (ALTC, 2010, p. 1). Despite these more stringent ways of assessing WIL in nursing (through reflections and the use of portfolios/diaries) compared to CM, there are nevertheless similar WIL issues identified here, in particular issues with students integrating their theory with practice. For instance, Severinsson (1997, p. 1276) identifies this theory/practice issue as a conflict between what is taught to the actual clinical practice and states that 'even if you know 'how to do it', the nursing process (theory) aimed at benefiting the patient is not always possible to implement in reality (practice)'. Severinsson (1997) investigated the importance of 'clinical supervision' of student during practice. Clinical supervision, she argues, allows for ongoing communication between practical experiences and reflecting upon these created an increased integration of practice and theory for students (Severinsson, 1997).

The above literature thereby indicates that industry (building companies and hospitals) and mentors, such as clinical supervisors, expectations of what students learning experiences during placement need to be constantly monitored, supervised and discussed. Such discussions highlight gaps between university and industry expectations and prompt remedial actions.

### Developing a WIL framework

In the following discussion, preliminary findings and the development of a WIL framework and related WIL issues arisen from the project are considered.

#### *Aligning the disciplines' competencies*

An initial analysis of the competency statements of the Nursing and CM accreditation bodies' skill requirement lists (Australian Nursing and Midwifery Council (ANMC), Australian Institute of Building (AIB), Australian Institute of Quantity Surveyors (AIQS), and the CIOB) was conducted to create a skills framework to align curricula with work skills. The competencies and graduate professional qualities of these two disciplines were mapped and evaluated against each other. It was apparent that there was no uniform set of graduate attributes across the curricula and institutions. Consequently a textual analysis of competencies using NVivo (qualitative research software tool) was conducted. This allowed the research team to identify core areas/synergies and discipline specific competencies.

Table 1 provides a snapshot of two of the competency core areas which emerged from this analysis. The researchers sourced the competency definitions from the professional bodies and aligned these within each of the disciplines and the DEST competency framework for 'employability skills' (DEST, 2006). Unexpected Generic synergies were identified within specific competency domains. These were; accurate data reporting, communication skills, management skills, research and reporting skills, self evaluation, health and safety, ethics, risk management, legal knowledge, up to date knowledge of the field - Industry and Institution changes. Differences between the disciplines competency requirements also surfaced, specifically within the domains of ethics and management skills, with CM requiring more management skills and nursing requiring more ethical skills. This comparison demonstrates where the disciplines diverge and converge allowing the disciplines to learn from each other. It further creates opportunities for the development of a generic competency review for all higher education disciplines.

**Table 1:** Snapshot of aligning of Competency between the two disciplines and the DEST skills framework (DEST, 2006, p. 10)

INVivo Nodes' Key Competency Alignments Found	Construction Management	Nursing — Registered Nurse	Nursing — Midwifery	Government 'Employability skills framework' (DEST Skills framework 2006, p.10)	Key Competencies
	Employability Skills				
Communication — team communication, conflict resolution	Claims and dispute resolution — know the construction process - communication skills	Communication skills to plan nursing care with individuals and groups	Communication skills to facilitate decision making	Communication	Communicating ideas and information
	Communication skills — writing and oral	Communication — Relationship building skills	Communication — Developing effective communication strategies	Teamwork	Working with others and in teams
	Interpersonal skills — Teamwork	Team communication and collaboration skills	Professional conduct — Knowledge and responsibility of actions		
	Communication skills — leadership, Appraisal/evaluation	Evaluation skills — health outcomes			
Management/Leadership skills	Understanding building management	Management skills — Knowledge of systematic assessment procedures		Problem Solving	Solve problems
		Project planning and programming skills, procurement knowledge			Plan and organise activities

Another issue, which became known from this exercise, was the extent to which definitions of competency requirements varied between professional bodies, especially in regards to CM. For instance some statements consist of a hierarchy of how a skill will be obtained whilst others have very basic descriptors.

Further qualitative work which is in progress, will supplement this initial competency analysis and competency development. This qualitative aspect of the research includes a review of program placement coordinators and students' views on issues in documenting WIL and competency achievements. It is anticipated that other WIL solutions will emerge during the analysis of the qualitative data in order to develop a learning framework for students which provides them with learning links between theory and practice.

This discussion raises further questions as to how do students in these disciplines demonstrate and document their WIL experiences and indeed, if the intended learning framework developed out of this project will assist them. The project proposal is to further investigate how the use of Web 2.0 and e-learning technologies could be an answer to these questions, to see if these tools can aid students' use of the learning framework.

### Using e-learning technologies to document and manage WIL?

Universities have increasingly been studying and implementing e-technologies, particularly the use of ePortfolios (Ayala, 2006; Heinrich, Bhattacharya, & Rayudu, 2007; Reardon & Hartley, 2007). An ePortfolio may be defined as an online program with links to Web 2.0 tools to document learning, assessment and to ultimately present a student's skills, progress and reflections (Ivanova, 2008; Schwartz, 2006). According to the Business Industry and Higher Education Collaboration Council (BIHECC, 2007, p. 41) 'one of the greatest strengths of (an ePortfolio) is that it provides a structured and cost-effective means to encourage students to manage their own career planning and skill development'. However, generic ePortfolios provide little specific guidance on the generic or discipline specific skills that students need to develop. EPortfolios might be 'seen by business and universities to be a practical method for graduates to explain and provide examples of their employability skills' (BIHECC, 2007, p. 4) but there is little evidence of their successful use in CM and nursing. Indeed, recommendation 7 of the BIHECC (BIHECC, 2007, p. 6) report encourages 'more effective integration of employability skills in student e-portfolios'.

The Australian ePortfolio project reported current levels of ePortfolio practice at Australian Universities. Part of this study included the documentation of WIL in ePortfolios (Hallam et al., 2008). Ultimately this project aims to work towards implementing a university wide ePortfolio system (Hallam et al., 2008). Anderson, Rambotham and Tones (2009) also reviewed ePortfolios for nursing at QUT where they used the national competency standards as anchors for reflective narrative and evidence gathering. They analysed students' experiences of using ePortfolios to document their skills and found that the ANMC competency statements were of benefit in shaping learning and reflecting in nursing and within the ePortfolio (Anderson et al., 2009). Similarly Li, Molyneaux & Botterill (2009) studied engineering students' use of the ePortfolio platform *Pebble PAD* to document their vacation employment. Their project involved creating detailed work experience

evaluation profiles and embedding these on the ePortfolio platform so students could attach evidence of their work and relate this to relevant competencies (Li et al., 2009). They found that 'in general, students regard this as a convenient and effective way to complete their work experience evaluation' (Li et al., 2009, p. 338). Other benefits of using ePortfolios to document employment skills these authors identified were ascertaining gaps in skills learnt and improving employability (Li et al., 2009). The discussion above on nursing and engineering's use of ePortfolios for placement suggests that similar benefits about using ePortfolios to document industry experience can be applied to CM students (who, as discussed, currently have no ePortfolio use or assessment of WIL). For instance, CM students could use their ePortfolio to demonstrate the practical experiences they have gained during their degree which would contribute to improving students' acquisition of professional skills in their field.

Some of the limitations of ePortfolios for students' placements are also discussed in relevant literature. For example, Li et al (2009) noted that students found ePortfolios to be a burden if they missed the training sessions. In regards to nursing, ePortfolio issues include limitations on students finding time to document their reflections and skills achieved. For example, the Hospital setting could inhibit ePortfolio use, aspects such as high clinical workload, could potentially impact on the time students have to do their professional reflection (Garrett & Jackson, 2006). Similarly, other general research on ePortfolio use, discusses students' lack of motivation to use ePortfolios to document and reflect on their academic work and work experience (Anderson et al., 2009; Eley, Fallon, Soar, Buikstra, & Hegney, 2009; Hallam et al., 2008; Miller & Morgaine, 2009).

This discussion shows that the reality of managing and assessing students' industry and clinical experiences within ePortfolio platforms can be a complex process due to some of the limitations defined above (such as time barriers and student motivation). Furthermore, the lack of documentation of skills learnt due to students' ad hoc approach of learning when on practical placement (as discussed by Li et al 2009 above) compound the challenges for implementing ePortfolios. The logistics of implementing ePortfolios for WIL and the resulting advantages and disadvantages viewed by staff and students will further be reviewed for the project.

Documenting the skills acquired on placements is a prime focus of the project and will be developed on a continuing basis as more qualitative data is gathered and analysed. The project will create a framework to encourage reflective learning during work-based activities. This framework will then link to discipline specific Continuing Professional Development (CPD) modules and will also align WIL and formal curricula. It will demonstrate and describe how these frameworks may be embedded in generic, 'open sourced' ePortfolio platforms, such as *PebblePAD* or *Mahara* for use in WIL activities.

## Conclusion

This paper describes work in progress on an ALTC project which investigates the facilitation of WIL in CM and Nursing. According to relevant literature, students' work-based experience in these disciplines is the key to their learning. Difficulties in recording these experiences were identified. In addition it was found that whilst certain competencies were common to both disciplines there were differences in scope and depth. These were exacerbated by ambiguities in the documentation



provided by some of the professional bodies. Workshops and interviews will explore these issues and should contribute to solutions.

Both the CM and Nursing disciplines will benefit from using e-learning technologies to document students' WIL. Additional challenges presented by these technologies will become clearer as the project progresses. These processes and findings will be documented and should ultimately improve the ways in which WIL administered and managed. They will also reinforce the links between theory and practice for CM and Nursing students and these deliverables may then be transferred to other disciplines.

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## Biographies

*Brief biographies of the research team from The University of Newcastle, Australia. The team is also in partnership with colleagues from Avondale College, RMIT and UWS for this project.*

### Anthony Williams

Anthony Williams is currently the Head of School — Architecture and the Built Environment. Anthony has a background in education and design team research, in particular evaluation of portfolios and online data management systems to support

curriculum development. He has also contributed to a range of teaching initiatives in this area, for instance, he has implemented a number of design management projects within student projects both in the normal classroom setting and the 'virtual classroom'.

### **Tracy Levett-Jones**

Tracy Levett-Jones is the Deputy Head of School (Teaching and Learning) in The School of Nursing and Midwifery. Tracy is a creative teacher who uses innovative and authentic teaching approaches that stimulate intellectual curiosity, the capacity for reflective thinking and a passion for nursing. Tracy held a teaching and learning fellowship during 2008 where she examined the ICT confidence and competence of undergraduate nursing students and how they influence students' engagement with online learning approaches.

### **William Sher**

William Sher is currently Assistant Dean (Teaching and Learning) in the School of Architecture and the Built Environment. William has extensive expertise in education research, having lead a National study in Construction Management Education in Australia (ALTC), and three government funded teaching and learning related projects whilst an academic in UK. One of these projects in the UK developed a university wide online database of graduate attributes. Before becoming an academic William worked as a construction-computing consultant, an estimator, a planner and as a site agent.

### **Catharine Simmons**

Dr. Catharine Simmons' academic background is in the Social Sciences. Her Honours and PhD studies looked at imaginative play and the culture of childhood. Her theses explore how children's knowledge of popular culture permeates their power relations, ultimately allowing them to collectively operate their own subculture. Her interests are in curricula development (Primary and Higher Education), knowledge, land conservation and media culture. Catharine has sound experience of conducting research on the issues and opportunities in Higher Education. Catharine has previously managed an Australian Learning and Teaching Council (ALTC) funded project at The University of Newcastle, the final report entitled 'Construction education in Australia: a review of learning and teaching challenges and opportunities'. She is today managing her second ALTC funded project, which considers how university students learn through practice in the workplace and the use of e-learning technologies in the Construction Management and Nursing disciplines.

### **Ning Gu**

Ning Gu is a lecturer in the School of Architecture and Built Environment. He researches in the broad areas of design computing, particularly, in generative design systems, virtual worlds and Building Information Modelling (BIM). Ning has also designed and implemented a variety of collaborative virtual environments and integrated this IT knowledge into his teaching and research.

### **Lynette Bowen**

Lyn Bowen is a lecturer at the Bachelor of Nursing — Site Coordinator for the Port Macquarie campus of The University of Newcastle. Lyn has worked as a Clinical Nurse Consultant in Infection Control and still carries a passion for this important aspect of health care. She has also been employed as Nurse Educator for Port Macquarie Base Hospital. Lyn also has a strong interest in Nurses' professional portfolio development. Her doctorate candidature focuses on the experience of registered nurses who mentor undergraduate nursing students in a rural context.